CONSEIL PERMANENT INTERNATIONAL POUR
L'EXPLORATION DE LA MER
CHARLOTTENLUND SLOT — DANEMARK

RAPPORTS
ET
PROCÈS-VERBAUX DES RÉUNIONS

VOLUME CXXI

1ÈRE PARTIE
PROCÈS-VERBAUX
(OCTOBRE — 1947)

2ÈME PARTIE
RAPPORT ADMINISTRATIF
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TRENTE-CINQUIÈME RÉUNION

COPENHAGUE — OCTOBRE 1947

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Président:
M. le Dr. JOHAN HJORT.

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Vice-Présidents:
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M. K. A. ANDERSSON.
M. PIERRE TISSIER.
M. G. J. LIENESCH à partir du 20 Octobre.

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M. Jens Smed, mag. scient. et cand. mag., Hydrographe.
Mlle E. Brønniche, 1e Secrétaire.
Mlle le Dr. M. Rehder, 2e Secrétaire.
Mlle I. Hansted, Secrétaire des Statistiques.

AGENDA

for the thirty-fifth Meeting of the International Council for the Exploration of the Sea. Copenhagen, 20—27th October, 1947.

A. Opening Meeting of Delegates and Experts.

1. Welcome and opening address by the President.
2. Report as to present Participation.
3. Date of Annual Meeting.[1])
4. Frequency of Council Meetings.[1])
5. Area Committees. Functions to be more clearly defined.[1])
6. Proceedings of Council Meetings. More time for discussions. Circulation of papers beforehand. Miscellaneous.[1])
7. Overfishing Problem.
8. Presentation of Administrative Report.
10. Presentation of Statement of Accounts for 1946/47.

B. Meeting of Delegates.

11. Opening of the Proceedings by the President.
12. Election of President and Vice-Presidents for 1947/48.

C. Final Council Meeting of Delegates and Experts.

13. Opening of Proceedings by the President.
14. Final Approval of the Accounts for 1945/46.
15. Adoption of the Administrative Report.
16. Provisional Adoption of the Statement of Accounts for 1946/47.
17. Consideration of Reports of Committees submitted by the Consultative Committee.
18. Estimates for the Financial Year 1947/48.
19. Nomination of Finance Committee, Editors, etc.
30. Time and place for the next Council Meeting.
21. Other business.
22. Conclusion of the Meeting.

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[1]) "Notes to the Agenda" see Appendix, pp. 20–21.

REPORT

of

THE THIRTY-FIFTH MEETING OF THE COUNCIL

First Sitting: Monday, October 20th, 1947, at 10 a. m.

The President, Professor HJORT, in the chair.

Present: the Members, Experts and Observers (*vide* list on pp. 6–9).

The President formally opened the Meeting in the following words:

Ladies and Gentlemen,

I have the honour to inaugurate this the thirty-fifth meeting of the International Council for the Exploration of the Sea.

First of all I beg to express the regret we all feel at the death of Professor OVE PAULSEN who has contributed so much to our knowledge of plankton life in the sea. I beg the Danish Delegates to convey our sympathy to Professor PAULSEN's family.

May I ask you to stand in silence for a moment in his memory.

In bidding you all welcome it is a special pleasure for me to inform you that Portugal has taken the decision to rejoin the Council, and we are happy again to meet our old friend Dr. RAMALHO, who is representing Portugal together with Rear-Admiral Quintão Meireles, whom we bid a hearty welcome. Furthermore I welcome in your name other Delegates attending the meeting for the first time; Dr. NAVARRO MARTIN from Spain and Mr. G. J. LIENESCH from Holland.—You have before you a list of members present which includes several new experts—and we bid them all welcome as co-operators in our future work.

I know that all members present will appreciate that I especially welcome our Honorary President, Mr. HENRY MAURICE.

As you will remember we have asked the Danish Foreign Office to invite the United States, Canada, Newfoundland and Russia to take a full share in our work. I regret very much to inform you that the United States have definitely replied that although they appreciated the invitation of the Council they believed that the desired co-operation could best be achieved by continued close collaboration between fishery research organizations of the United States and the International Council. The Commissioner for Natural Resources, Newfoundland, has replied that his Government regretted their inability to accept the invitation of the International Council. Canada and the U. S. S. R., however, are still contemplating the Council's invitation, and we are very glad again to welcome an observer from Canada, Mr. H. B. HACHEY, Senior Hydrographer of the Fisheries Research Board of Canada. Furthermore Australia has proved her interest in our work by sending an observer from the Australian Scientific Liaison Office in London, Mr. D. T. C. GILLESPIE, whom we are bidding welcome. Our last news from Russia was to the effect that they were contemplating to send an observer to the meeting. Another guest from Canada, Mr. RAYMOND, who at present is studying at the Zoological Museum in Copenhagen, is attending this meeting.

The President then proposed to telegraph as usual to the King of Denmark, and further to Sir D'ARCY THOMPSON, Mrs. SCHMIDT and Mrs. NELLEMOSE.

Thereafter the President said that according to usage the Committees in being and their Chairmen would be acting during the session, but certain Chairmen having been prevented from attending the Meeting, these Committees needed acting Chairmen and he proposed that Dr. JESPERSEN, as suggested by Dr. F. S. RUSSELL himself, should preside over the Plankton Committee and Dr. ROSÉN over the Statistical Committee.

The President then spoke as follows:

I have taken the liberty of distributing a brief report of an address given in Copenhagen on the 12th March this year and translated into English. In this lecture it is submitted that the basis for the understanding and the work for the recognition of all social problems must be the "social experiment", based on the same ideas which have created natural science.

This has been the foundation of the practical work on which the Council has been built up for over 50 years. By fishery experiments the members of the Council have been able to develop new enterprises which have already enriched the fishermen of the north of Europe probably to the extent of over £5,000,000, and which in the future will give still bigger returns for their work. This many times exceeds the funds which all countries have contributed to the Council's budget.

In conjunction with the social experiments the activities of the Council have also been directed to discovering and explaining the annual fluctuations that are created by nature. These fluctuations consist partly in changes in the size of the stock of fish, and its extension year by year, and partly in the changing chemical and physical conditions of existence which are present where a new generation—what we call a year-class—arises. In my lecture I stated that these fluctuations agree with and confirm the brilliant ideas propounded a century and a half ago by Lamarck, and that what we called hydrographical-biological investigations at the outset of our work are a restitution of the method created by him for biological research.

It is understandable that one who has participated in this work for so many years should regard the international field as conditioned by the geographical extension of the organisms which are the subject of his research. My own investigations have given me the strongest impression that the fish fauna of Northern Europe and the environment peculiar to it extend from Novaya Zemblya in the north-east, Spitzbergen in the north, the west coast of Greenland and the waters of New England in the north-west. By research and by fishery experiments it has been established that within the whole of this region there are common and peculiar living conditions, and the fauna corresponding to them. In view of this I ventured during the Stockholm conference last year to declare that all the countries whose nationals can and will participate in the work and the practical achievements in this field should join this Council. It is natural that biologists should place greater emphasis on the areas of fish migrations than on the national frontiers drawn up by the politicians.

There are countries such as France, Spain and Portugal which have joined the Council and which have coasts where there is a different fauna from that of Northern Europe. Consequently we who have experienced the great expansion of the study of what we call the Northern European fauna, feel that it would be just and fair that the activities of the Council should be extended to cover the whole of the area of extension of this more southerly fauna, if these more southerly countries desire it.

The objection has been made that the funds placed at the Council's disposal by the various countries will not permit of such extended activities. But those who have experienced, and have been fortunate in contributing towards, the increase in the yield from the Council's work to many times the amount of its budget, will not be in favour of restricting its extension for financial motives. Still less can we admit that the work be left to organizations which in no way have given practical evidence of their productive capability nor have understood that a new social science can only be created by the experimental method—as we see from Galileo and others who after the long sleep of the Middle Ages created the new advance which came to be known as the Industrial Revolution.

It is for this reason, that it is vital for the Council to assert itself as a scientific institution—in its management and in its work. For this reason, also, I have urged what Lamarck said in his famous lectures in 1800, that the international idea is voluntary co-operation (la concordance). We who share this view have been glad to see that there is a common interest in all the co-operating countries both for the object of creating new working possibilities and for the rationalizing of the method of work, even where it requires a statutory restriction. It has pleased us no less that there has been agreement that each country in its work and sphere should be able to pursue a different procedure towards the same objective.

It is natural science which has created these ideas and methods. They have so far found slight understanding by the social science and politics of the various countries. Hence it is our right and our duty to assert natural science as the basis for the Council, in its work as in its administration.

Points 3 to 7 of the Agenda.

Mr. Dobson said that these items had been put on the Agenda at the request of the British Delegation, not as proposals but as raising matters of general interest to all Members and Experts. The President had, however, suggested that this meeting should deal with points 3 and 4 only, while points 5 to 7 should be referred to the Committees for their consideration and report to the Consultative Committee. Mr. Dobson drew attention to the notes which he had prepared for the guidance of those concerned and which had been distributed with the Agenda and Estimates[1]). Taking items 3 and 4 together there were two questions: 1) during what month of the year the Council Meeting should be held, and 2) should the Council Meeting be held every year or would it be sufficient to hold them every other year. The Statutes only said that the Meetings should normally be held every year. He himself considered it quite improper that this Council should meet 3 months after the close of a financial year without having any budget approved for the following year. He was of opinion that the Council Meetings ought to be held some months before the closure of the financial year. This was only an administrative point-of-view, from a scientific point-of-view there would be question of which time of

[1]) See Appendix, p. 20.

the year it would be most practical for scientists working at sea to attend the meeting. He had been informed from certain quarters that May would be a suitable time; this would mean that we could start the new year with Committees appointed and Estimated adopted. In respect of the question of meetings every year or not he had himself a perfectly open mind; he desired to hear the opinions of the members, but at any rate he would propose in case the meetings were settled for May that the next Meeting should take place in 1949, as May 1948 would be only 9 months ahead.

The President reminded the members of the authorization given the President in May 1939 "to incur and defray, within the limits of the previous year's budget, the expenses which of necessity arise after the closure of the financial year until a new budget has received the sanction of the Council". In his opinion there could be no objection to the budget being voted until the 21st of July and the meeting being held afterwards. He said that he did not lay much stress on this procedure, but he was very much concerned about finding a time for the Council Meeting which would suit the scientists working at sea.

Professor DAHL seconded the President's suggestions that all 5 questions should be treated first in the various Committees.

Dr. HAVINGA thought it would be preferable to have a discussion in the full meeting where all were assembled at a time. As to the time of the meetings he would think May were a very suitable time, if it were early in May or preferably April. If the meetings were held in March, April or May there would be time to take into consideration at the earliest possible date the proposals and programmes from the Committees.

Dr. CLARK was agreeable to the suggestion that the discussions should be left to the Consultative Committee so that the views of all Committees might be heard. As regards the general question of holding the meeting at another time of the year he supported Mr. DOBSON's point of view in respect of the financial year. It was his duty to give some directions to his Committee. If the meeting were held in March the previous year's work would be finished and the next year's work could be planned.

Mr. GRAHAM, speaking for Great Britain's Experts, would prefer May. As regards the frequency they would prefer every other year.

Mr. DOBSON said he would be somewhat disappointed, if the discussion was deferred until the final Council Meeting, as this might become a very long meeting. It was most valuable to have the members' opinion now.

Mr. GRAHAM was of the same opinion, and did not want the discussion stopped.

Mr. ROLLEFSEN, on behalf of his Norwegian colleagues, would prefer the autumn for instance from August to October. During springtime from January to May they were busy preparing work at sea.

Dr. CLARK suggested from the middle to the end of May.

The President suggested to take a vote and thereafter discuss the question in the Committees.

Mr. GRAHAM wanted to hear the opinion of the members with regard to meetings every other year.

The President asked whether it was from an economic point-of-view or in order to save time.

Mr. GRAHAM said that there was not enough progress between the annual meetings.

Dr. ANDERSSON said that this question had been discussed several times during the previous years, the time had been altered, in some years the Council Meeting had been held in the spring, in others in the autumn. Mr. DOBSON had given one reason for holding the meetings in the spring, i. e., the present date of the financial year, he should like the question discussed in the Committees.

Dr. WENT supported Mr. DOBSON's view that the budget should be fixed before the beginning of the financial year, but reminded the members that in case of meetings every other year it would be necessary to prepare two years' budgets at a time.

Dr. BLEGVAD thought that from a scientific point-of-view February would be the best time, the last year's work being finished and the programme for the next year could be settled.

It was finally agreed that the questions should be discussed in the Committees.

Point 8 of the Agenda. Overfishing Problem.

The President called upon Mr. DOBSON.

Mr. DOBSON spoke as follows:

"At the Stockholm Meeting I had the privilege of giving you a short account of the International Conference on Overfishing which took place in London in March and April 1946. Apart from drawing up a Convention dealing with mesh of nets and size limits, the Conference recommended the appointment of an Advisory Committee to study and within a year to make proposals as to other suitable forms of regulations.

The inclusion of this item in the agenda of to-day's meeting enables me to say a word about the operations of this Advisory Committee which met in London in January 1947. The Committee did me the honour of electing me as Chairman and I thereafter ceased to be the British Delegate. On this occasion the Committee did not reach any definite conclusions on the various proposals discussed and the meeting was in effect adjourned until April 1947.

The Committee produced a report of each of these meetings with which most of those present are familiar. At the April Meeting the representatives of each country in fact put forward their own proposals for dealing with the overfishing problem and these were generally accepted as constituting an equivalent contribution to the problem. The proposals of each country are set out in the Report, so that I need not read this now.

Finally the Committee recommended the setting up of an International Commission which should consist of the existing Standing Advisory Committee. The terms of reference of the Commission were "To take under annual review the fishing activity in the North Sea from the point-of-view of the conservation of the stocks and to report thereon to the Government concerned."

The Committee also recommended that its report should be circulated to the Governments concerned for its adoption in writing.

In the light of the information which I have given there are two outstanding matters of some urgency.

In the first place we still await ratification from certain countries to the Convention drawn up at the March/April Conference 1946. Until that Convention is ratified by all or by an agreed number of the countries concerned, the main restrictions as regards nets and sizes of fish cannot be brought into operation.

Secondly it is of the utmost importance that the Governments concerned should as soon as possible indicate their acceptance of the Advisory Committee's Final Report.

I understand that this report has been accepted by the British Government and is soon being circulated to the other Governments concerned."

Point 9 of the Agenda. Presentation of the Administrative Report.

The General Secretary drew attention to the Administrative Report, which had just been distributed, and proposed that opportunity for comments on this should be given at the final Council Meeting.

Point 10 of the Agenda. Presentation of the Statement of Accounts for 1946/47.

The General Secretary drew attention to the Statement of Accounts for 1946/47 which was included in the Administrative Report and proposed to defer further consideration of them to the final sitting.

The Meeting then adjourned at 11.25 a. m.

Second Sitting: Monday, October 20th, at 11.35 a. m.

The President, Professor HJORT, in the chair.
Present: the Members of the Council.

Under **Point 11 of the Agenda** the President opened the deliberations.

Point 12 of the Agenda. Election of President and Vice-Presidents.

The President asked the Delegates for proposals.

Dr. LE GALL spoke as follows:

"J'ai la conviction qu'une grande voix du Conseil qui s'est tue, celle du Président Théodore Tissier, se serait élevée à ce moment—dans l'intérêt général du Conseil International pour l'Exploration de la Mer—pour éviter toute lutte d'influence autour du Bureau de ce Conseil et dans un désir d'appaisement et qu'elle vous eut proposé d'insister près du Président HJORT pour qu'il conserve la Présidence de ce Conseil pour une nouvelle année et de le maintenir à ce poste. C'est dans cet esprit qu'au nom de la Délégation française, je propose le maintien à la Présidence pour une nouvelle année du Président J. HJORT, dont la santé chancelante l'an dernier est heureusement établie."

Dr. BOROWIK in the name of the Polish Delegation begged to second this proposal.

Mr. DOBSON said that he did not quite understand the position. At the Meeting in Stockholm Prof. HJORT had categorically declared that he would remain President for one year more only, at the Bureau Meeting in Copenhagen in May he had repeated this standpoint, and furthermore he had confirmed his position categorically in writing to the Fisheries Secretary in London, Mr. DUNN. He, therefore, asked the President what was his reply to this proposal.

The President said that the position of the Council in several respects had been proposed to be altered. Besides last year he had felt rather ill between two major operations, but now he felt quite recovered. He was still willing to retire, if this was wanted, but if his colleagues wanted him to remain President for one year more, he would be prepared to remain.

Mr. DE WATTEVILLE said that this was a very embarrassing situation. He was very glad that the President's health was better, but he felt that some of the Delegates would regard it as a graceful act on the part of Professor HJORT if he could see his way to let one of the younger Delegates succeed him. The post of President was a very vital one and the choice of a President the most important for the Council. Personal feelings must therefore not be allowed to affect the issue. Mr. DE WATTEVILLE pointed out that Mr. DOBSON had long experience on the Bureau and had last year been appointed First Vice-President in anticipation of the President's retirement. He suggested that Mr. DOBSON had conclusively shown during his tenure of office that he was eminently qualified for the position of President.

It had been said that the President of the Council ought to be a scientist; he suggested that the essential qualifications for the Presidency were capacity as administrator to handle the financial and business affairs of the Council and a personality in which the Council had confidence. Mr. DE WATTEVILLE then referred to the presence of the Honorary President, Mr. MAURICE, who had been a successful President for many years, and was not a scientist, as proof that it was not necessary to have a scientist at the head of the Council. He thought it would be a good thing for the Council, if Mr. DOBSON was elected President.

M. LE GALL spoke as follows:—

"Le Gouvernement français désireux d'éviter autour du Bureau du Conseil International toute lutte d'influence entre les grandes puissances qui y sont ou y seront représentées estime indispensable que la présidence reste confiée au représentant d'une nation secondaire. Ce Conseil doit rester, en effet, un organisme essentiellement scientifique et apolitique."

Mr. MAURICE said that it had not been his intention to intervene in the debate. But the President had put us in a difficult position, as he had resigned as from this year at the last meeting last year, and had now said that it was preferable to have a scientist as President. All members had put up cheerfully with himself during 18 years, and he was no scientist, so he could see no reason why the President should now be a scientist. What the Council needed was an administrator as President and a scientist as Chairman of the Consultative Committee to promote the scientific work of the Council. Mr. MAURICE thought he managed to carry on because he had realized that administration was the business of the Bureau. Now M. LE GALL had placed before the Council another proposal and Mr. MAURICE wanted to warn the Council against false views. In his opinion it was dangerous and destructive to the brotherhood to introduce the question of the nationality of the President, all the Council wanted was the best man.

Professor KNUDSEN said that, on behalf of the Danish Delegation he was glad to support the proposal made by the French Delegation.

Dr. HAVINGA quite agreed with Mr. MAURICE that the essential was to choose the best man, scientist or not scientist.

Dr. ANDERSSON, on behalf of the Swedish Delegation, said he would also like to support the French proposal. It was quite true that the President should be a good administrator, but to be a good scientist did not prevent him from being a good administrator, and in their opinion a scientist was most desirable.

Mr. MAURICE remarked that he had not said that a scientist could not be a good administrator.

Dr. WENT stated that he was in an awkward position owing to the kindness shown to him by the President when he was a student in Oslo, but he thought the attempt to influence the Council with the idea that the President should be a scientist should be viewed with grave misgiving. If the Council believed that a scientist should be President then the Council should recommend to the participating countries that the statutes be suitably amended. For the Council's well-being the best man ought to be chosen, whether he be scientist or administrator.

Mr. DOBSON suggested an adjournment of the meeting for ten minutes in order that he might discuss the question privately with his colleagues.

The meeting adjourned for ten minutes.

Upon resumption Mr. DOBSON said that he was grateful for the opportunity of this brief adjournment. He had now discussed the position with his British colleagues. They had arrived at this meeting with certain definite instructions from their Government which now turned out to be framed on completely incorrect information. On three signal occasions Dr. HJORT had made it known that he did not intend to continue as President. First at the Stockholm Meeting, secondly at the Bureau Meeting in May 1947 and thirdly in a subsequent letter to the Fisheries Secretary at the Ministry of Agriculture and Fisheries. It was on these pronouncements that the British Delegates' instructions had been framed. He had a great regard, indeed an affection for Dr. HJORT and he would be extremely sorry to take any action which might cause a feeling of unpleasantness in the Council, and in any case he would deprecate a vote on the subject. He was, therefore, prepared in spite of his instructions to take the responsibility for asking Mr. DE WATTEVILLE to withdraw his name as a candidate for the Presidency.

Mr. DOBSON then as Senior Vice-President asked the meeting to elect Dr. HJORT unanimously and this was done.

The President thanked Mr. DOBSON for this gracious gesture and thanked all present for the renewal of their confidence. He hoped the Council would succeed in carrying out the ideas which he had expressed in his first speech and referred to a paper already circulated which would later appear in the "Journal du Conseil" and which was a translation of a lecture he had given last winter in Copenhagen.

The Council then proceeded to the election of Vice-Presidents. At the suggestion of Mr. DOBSON the Vice-Presidents were taken one by one.

Mr. DOBSON was elected Premier Vice-President, and Dr. ANDERSSON as a Vice-President. Mr. DOBSON then expressed the view that a younger Delegate should become a member of the Bureau and proposed Mr. LIENESCH from Holland.

Professor KNUDSEN thereupon expressed his readiness to retire and Mr. LIENESCH being ready to accept election was duly elected.

Dr. LE GALL said that he knew M. TISSIER was prepared to accept a re-election, and he was accordingly re-elected.

The President thanked Prof. KNUDSEN for his willingness to withdraw from the Bureau and reminded

the members of the great services rendered by him, more especially the help he had rendered the Council, when during the war he had succeeded in persuading the Danish Government to contribute 44,000 Danish Kr. in addition to the normal contribution of 10,000 Kr. towards the expenses of the Council.

Finally Mr. DOBSON asked the Delegates to consider a proposal which he wanted to put forward, viz., that the Chairman of the Consultative Committee instead of being co-opted from time to time when available, should become a permanent member of the Bureau. This would involve a slight alteration of the Statutes, which he hoped the Delegates would allow him to put forward at the final sitting, in spite of the shortness of notice. Dr. HJORT assented to this proposal and it was left to Mr. DOBSON to take the necessary action.

The meeting then terminated at 12.25 p. m.

Third Sitting: October 27th, 1947, at 10.15 a. m.

The President, Professor HJORT, in the Chair.
Present: Members, Experts, Observers and Guest.

The President opened the Meeting and stated that in accordance with the decision of the first sitting of the Council the following telegrams had been sent to His Majesty the King of Denmark and to Sir D'ARCY THOMPSON:—

A Sa Majesté le Roi de Danemark,

"Les membres du Conseil International pour l'Exploration de la Mer réunis en Assemblé plénière à Copenhague demandent la permission de témoigner à Sa Majesté avec leurs condoléances sincères, leurs sentiments les plus respectueux.

JOHAN HJORT
Président"

and to

Professor Sir D'ARCY THOMPSON,

"All Delegates and Experts of the International Council send their affectionate greetings and sincere wishes for the speedy and complete recovery of your health and vigour.

JOHAN HJORT"

in reply to which the following telegrams had been received:—

"Mes remerciements sincères

FREDERIK R."

and

"Heartiest thanks to you all

D'ARCY THOMPSON"

In addition telegrams had been sent to Mrs. SCHMIDT and Mrs. NELLEMOSE.

During the session the following telegram had been received from Professor HANS PETTERSSON and other absent friends on the "Albatross":—

"Best wishes for a successful meeting from absent friends on board the Albatross off Nukuhiva.

HANS PETTERSSON."

in reply to which the President proposed that the following telegram should be sent:—

"Delegates and Experts of the International Council thank you for your telegram and send you their affectionate regards.

HJORT, President".

The President also proposed that the following telegram be sent to the former Chairman of the Consultative Committee, Dr. E. S. RUSSELL:—

"Delegates and Experts of the International Council assembled for their closing meeting send you their affectionate regards.

HJORT, President".

Point 14 of the Agenda. Final Approval of the Accounts for 1945/46.

The Accounts for 1945/46, already audited by the qualified accountant and revised by the Finance Committee, were finally approved.

Point 15 of the Agenda. Adoption of the Administrative Report.

No observations having been received as to the Administrative Report circulated at the first sitting of the Council, it was adopted without amendments.

Point 16 of the Agenda. Provisional Adoption of Statement of Accounts for 1946/47.

These accounts having already been audited by the auditors, but not yet passed by the Finance Committee, were provisionally accepted, final approval being postponed until next year.

Point 17 of the Agenda. Consideration of Reports of Committees submitted by the Consultative Committee.

The President referred to the partly printed and partly duplicated copies of all reports and recommendations of the committees, which were placed on the table.

The reports of Area Committees and other Committees had all been considered by the Consultative Committee and the Bureau, and the President drew attention to a few points only, adding that with regard to such recommendations as involved expenditure the first Vice-President, Mr. Dobson, would later in this meeting draw special attention to such when treating item 18 of the Agenda—Estimates for the Financial Year 1947/48.

The President asked Dr. Clark if he had any special remarks as to the Recommendations of the Consultative Committee, and

Dr. Clark said that the work having been rushed, and no proofs having been read either by the printer or the office, certain errors had occurred. They would however, be corrected in the final edition. The report of the first Special Scientific Meeting was on the table, but not that of the second Meeting. The papers read at both meetings would be printed in the Series Rapp. et Proc.-Verb. according to the usual procedure.

The President then spoke as follows:

"The adoption of the recommendations of the Consultative Committee carries with it such recommendations of all other Committees as have been passed by the Consultative Committee, and I need only point to the recommendations by the Consultative Committee itself. First and foremost, there are the recommendations which have resulted from the Committee's examination of the five points put forward by Mr. Dobson in his Note to Points 3 to 7 of the Agenda: ad 3 and 4, Meetings to be held annually in the first half of October; Point 5, no formal change, i. e., no restriction of subject matter, closer co-ordination of committees etc.; Point 6, every effort to be made to circulate papers well in advance of Council Meeting; and Point 7, no alteration. I am very glad to see that the committees have thought it undesirable to disturb present arrangements for honoraria.

In order to promote a better co-ordination of work, the Consultative Committee has further recommended that the broad lines of the general work and the ships' programmes should be discussed each year, first by the committees and then by a special meeting of the Consultative Committee.

Furthermore the Consultative Committee has recommended that there should be two Special Meetings at the next Council Meeting, viz., 1) on "Climatic Changes in the Arctic in relation to plants and animals" at which Prof. Hans Ahlmann from Stockholm should be invited to address the meeting as the guest of the Council. 2) On the comparative efficiency of fishing craft, their gear and modifications of gear, to be convened by Dr. Borowik.

Dr. Clark reminded the meeting that a convener for the Meeting on Climatic Changes had to be appointed, and the President suggested the new Chairman of the Hydrographical Committee, Mr. Thomsen. Dr. Clark, seconded by Mr. Friðriksson suggested Mr. Rollefsen. (Applause) Mr. Rollefsen, very reluctantly agreed to be convener of the meeting.

The President resumed:—

"Recommendation 4 of the Consultative Committee includes certain Meetings of Experts and attendance at meetings for which provision will be made in the Estimates:—

1) the Chairman of the Hydrographical and the Plankton Committees should represent the Council at the Meeting of the International Association of Oceanography in Oslo from 19th to 28th August, 1948.

2) as the Meeting in Biarritz, re-voted twice since 1939 has been extended to comprise the study of other clupeoid fishes (except herring), representatives from Norway and Sweden should also take part. (In this connexion the President informed the Council that the Bureau had agreed that he himself and the General Secretary should also attend this meeting).

3) the Chairman of the Statistical Committee, Dr. Rosén, Dr. Borowik and Mr. Graham should represent the Council in a Sub-Committee consisting of representatives of the Council, the Fisheries Statistical Service of the principal countries concerned with fisheries and the Fisheries Division of FAO, to meet in Copenhagen.

4) the Sub-Committee on the Faroe Question should meet two days in advance of the next Council Meeting."

The President went on to say that he had received the previous night a letter from Dr. Eggvin expressing his deep regret that the Consultative Committee had not seen its way to recommend a proposal from the Hydrographical-Biological Sub-Committee in respect of a meeting in Gothenburg for 3 days in December only. He asked Dr. Eggvin to explain his point-of-view.

Dr. Eggvin considered it very important that this meeting should take place in order to discuss the results from this year's investigations in the North Sea and the Skagerak, carried out by Denmark, Norway and Sweden in co-operation with each other, from research ships and from fixed stations. In the light of these the best possible plan for the next year's investigations in this area might be made. The plan should then be circulated through the Council to all biologists interested, inviting them to state what biological investigations they should like to have carried out. He considered that as much as possible of the work requested should be carried out. This arrangement had been agreed to by the Hydrographical-Biological Sub-Committee. If the biologists wished to be represented at the meeting planned in Gothenburg, Dr. Eggvin felt sure that the oceanographers would welcome them.

The President expressed his sympathy with

hydrographic work with the purpose of studying the co-ordination between living animals and the sea, and asked if the Council desired to support the plan for this meeting.

Dr. CLARK said that the Consultative Committee had been of opinion that biologists also ought to take part in this work, it seemed to him that this Sub-Committee was actually breaking apart from the collaboration. The decision of the Consultative Committee regarding this proposal was that it should be done by correspondence.

Mr. DOBSON hesitated to intervene in scientific matters, but asked if the Committee might not meet now while they were assembled in Copenhagen, but

Mr. EGGVIN said that this was too early, as the results of the investigations were not yet ready for consideration. He replied to Dr. CLARK's remarks by referring to the statement he had just made.

The President did not like to press this question further on receiving so little support, but

Mr. DOBSON said that he was not hostile, if the meeting decided that the meeting was desirable.

Dr. CLARK concurred and

the Council accepted the proposal.

The President said that Recommendation 5 of the Consultative Committee concerned various actions for the Council to be taken through the Danish Foreign Office as also a recommendation that the General Secretary should request the various countries to deliver their statistical information with much greater expedition.

He had only one thing to add which was outside the Recommendations of the Consultative Committee, viz., a change in chairmanship in the Baltic Area Committee, as Dr. K. A. ANDERSSON had resigned, and Dr. HESSLE had been elected unanimously by the Committee.

The Reports and Recommendations of Committees were then at the President's suggestion adopted en bloc.

Point 18 of the Agenda. Estimates for the Financial Year 1947/48.

The President called upon Mr. DOBSON,

Mr. DOBSON said that the Estimates for the financial year 1947/48 which had been laid round the table did not contain very many alterations as compared with the preliminary Estimates which had already been circulated. As regards I. Incidentals, the only alteration that had been made by the Bureau was the raising of the honorarium to the Chairman of the Consultative Committee from 3,000 Kr. to 4,000 Kr. as it was felt that his responsibility was greater than that of the chairmen of the other committees. It had already been decided, as the President had mentioned, that no disturbance should be made in the principle of paying honoraria. As regards II. Headquarter Staff, the only alterations were due to salary increments and cost-of-living bonus, the same applied to III. Hydrographical Staff; Item IV. Office Expenses remained at 18,000 Kr., while V. Travelling Expenses, which amounted last year to 13,000 Kr. had now been increased to 20,000 Kr. to which must be added 2,000 Kr. to cover Dr. EGGVIN's meeting. Item VI. Printing and Distribution raised great difficulties as the cost of printing etc. was now 3 times what it was before and Dr. BLEGVAD explained that against the 45,000 Kr. set out in the preliminary Estimates there were a number of bills outstanding from the previous year, which would have to be paid as a number of publications had been held up owing to the printers' strike. The sum spent last year was, therefore, no guide to future estimates. The Bureau, therefore, decided to recommend a figure of 50,000 Kr. and, in order to provide for eventualities increase VIII. Extraordinary Expenses, from 1,500 Kr. to 5,000 Kr. The Bureau had also asked the General Secretary to consider a saving by means of photostatic printing especially in the case of tables.

On the other side of the accounts the Bureau considered it was reasonable to raise the price for the publications and the Estimates, therefore, show a sum of 3,000 Kr. for sale of publications against 2,000 Kr. originally inserted in the preliminary Estimates.

There only remained Item VII. Pension Fund. Mr. DOBSON said that this sum was about 800 Kr. in excess of the usual amount set aside by the Council to provide a Pension Fund. This Pension Fund now amounted to a sum at present market value of 112,000 Kr., this sum would be available to accrue without any addition and would be available to meet the cost of pensions to those members of the staff who were too old to participate in any pension scheme. For the younger members of the staff a pension scheme which was laid round the table has been discussed with the chief Pension Insurance Company in Denmark and it was proposed that the Council should augment the premiums to be paid by each member of the staff by a considerably larger sum so that they might have pensions along the line laid down in the paper circulated. These contributions by the Council would involve the Council in an annual sum of 4,300 Kr. as indicated in the Estimates.

The net result of the new Estimates would be that the Council would have to find from reserves the sum of 60,185 Kr. for the coming year, and if we have to find a somewhat similar amount for each of the two succeeding years there would be a balance for emergency at the end of the present quinquennial period.

Mr. DOBSON then formally moved the adoption of the Estimates.

The President expressed his gratitude to Mr. DOBSON for his presentation of the Estimates, and added that although the reserve balance of the Council was considerable enough to carry the Council through until the end of the five-year period, i. e., until July 21st 1950, so that there would still be a reserve even if about 60,000 Kr. were used three times, he thought it appropriate that delegates should sound their respective Governments as to an augmentation of their contributions, especially in view of the very

high printing costs. It was not his intention that any official request should be sent to the Governments through the diplomatic channels, but he asked the Delegates privately to sound their Governments about this matter.

The Council agreed to this.

Point 19 of the Agenda. Nomination of the Finance Committee, Editors etc.

In addition to the permanent members of the Finance Committee, viz., the President and the Danish Delegates, Doctors RAMALHO, BOROWIK and NAVARRO were nominated members of the Finance Committee. Professor KNUDSEN was re-elected Hydrographical Consultant and Dr. ROSÉN, Mr. LUMBY and Dr. JESPERSEN were re-elected Editors for Statistics, for the Journal and the Plankton Sheets respectively.

According to the "Organisation of the Council" as revised in 1934 the Chairmen of the Statistical, the Hydrographical, the Salmon and Trout, and the Plankton Committees were to be appointed by the Council. The Chairman of the Hydrographical Committee had desired to resign, and it was proposed to appoint Mr. HELGE THOMSEN, as unanimously desired by the committee. This was agreed. For the Plankton Committee Dr. F. S. RUSSELL was re-elected as desired by the committee. The two other committees having proposed the re-election of their Chairmen, with the addition that they desired to appoint a substitute in case of the Chairman's absence from the meeting, Dr. ROSÉN was elected as substitute for Sir D'ARCY THOMPSON in the Statistical Committee and Mr. SØMME as substitute for Prof. DAHL in the Salmon and Trout Committee.

Point 20 of the Agenda. Time and Place for the next Council Meeting.

The Bureau proposed to hold the next Council Meeting in Copenhagen and that in accordance with the recommendation of the committees the meeting should be held in the first half of October, the exact date to be fixed later by the Bureau.

Point 21 of the Agenda. Other Business.

Mr. DOBSON reminded the meeting that at the Delegates' meeting he had given notice of his intention to move at this meeting an amendment of the Statutes so as to provide that the Chairman of the Consultative Committee should be a member of the Bureau. (He read the relative extracts). It had been the custom to co-opt the Chairman as a member as occasion required, but at the main meetings of the Bureau he was not available for co-option.

It had been suggested that if the Chairman of the Consultative Committee were a member of the Bureau, the voting balance of the Bureau would be disturbed and Mr. DOBSON therefore confined himself to a simple resolution that the Council should agree that the Chairman of the Consultative Committee should be invited to attend all meetings of the Bureau. This was agreed.

The President read the following letter received from the guest of the Council Mr. ROBERT RAYMOND:

"Mr. President,

I wish to express to you and all members of this Council my most sincere thanks for your very kind and special invitation to these meetings. It has been a great encouragement to me, and the most splendid week of my life.

Yours respectfully,

ROBERT RAYMOND
Canadian student at the
University of Copenhagen."

Just before the conclusion of the meeting Mr. MAURICE asked to be allowed to say a few words. Miss HANSTED would leave the Head Office after 35 years of office and the members of the Council had asked him in the name of all to thank her for her services and present her with a little gift in memory.

Point 22 of the Agenda. Conclusion of the Meeting.

The President proposed a hearty vote of thanks to the Danish Government for hospitality and for the luncheons served during the meetings, as well as hearty votes of thanks to the Chairman of the Consultative Committee, the General Secretary and the Staff of the Council.

Dr. ANDERSSON on behalf of the members of the Council moved their cordial thanks to the President for having presided in such an excellent way.

The Meeting terminated at 11.30 a. m.

After the final meeting of the Council, it was discovered that no provision under Item I (6) Incidentals (Chairmen and Vice-chairmen of Committees) had been made for any honorarium to the Chairman of the Hydrographical Committee. Hitherto Dr. KNUDSEN had drawn 3,000 Kr. as Hydrographical

Consultant, but nothing as Chairman of the Hydrographical Committee. Dr. KNUDSEN continues to draw 3,000 Kr. as Hydrographical Consultant and we are accordingly of opinion that the new Chairman, Mr. HELGE THOMSEN, should draw during the coming year 1,000 Kr., this decision to be confirmed at the next meeting of the Council.

We therefore authorize this payment out of one of the other subheads, e. g., Extraordinary Expenses, as may be convenient.

October, 28th 1947.

JOHAN HJORT
President.

H. BLEGVAD
General Secretary.

A.T.A. DOBSON
Vice-President.

APPENDIX

Notes

to the Agenda for 35th Annual Meeting of the International Council for the Exploration of the Sea.

The attention of Delegates and Experts is drawn to Items 3 to 7 on the Agenda for the forthcoming Annual Meeting.

It has been arranged that, with the concurrence of the President, Mr. DOBSON shall introduce these various items as it was at his suggestion that they were included on the agenda.

The following observations have been prepared by Mr. DOBSON in the hope that they may be of use to Delegates and Experts, as it is particularly important that these matters should be freely discussed in order that the Bureau in coming to a final decision upon them, may have the views of all concerned.

1. Date of Annual Meetings.

The financial year of the Council at present ends on the 21st July, but the Council Meeting has not been held until after the close of the financial year, with the result, among other things, that the new year starts without any budget having been approved.

It seems desirable from all points of view that the Annual Meeting should, if possible, be held before the close of the financial year, so that the necessary budget can be sanctioned and the necessary officers appointed to take office as from the opening of the new financial year.

It is understood that it would be inconvenient to those engaged on the various research ships if the meeting were held in the middle of July, but that the middle of May would be suitable as has mostly been the case since 1927, when the financial year ended on March 31st. Otherwise there is no other alternative but to alter the financial year which seems unnessary.

2. Frequency of the Council Meetings.

It has been suggested that the meetings of the Council could be held more conveniently every two years and more special meetings on specific problems held.

In considering this question, Delegates and Experts will bear in mind that if this suggestion were adopted, in the first instance greater expenditure would be incurred by the Council, because the cost of special meetings falls on the Council, and secondly, considerable alteration of the Statutes would be necessary as at present appointments are for one year only. The views of all concerned would be helpful.

3. Functions of Area Committees.

It has been suggested that, under present arrangements, time is wasted by discussion on general technical subjets, e. g., releasing action of trawl nets, being repeated in several committees; and that area committees should confine themselves to problems specific to their area, e. g., reporting on fluctuations, and co-ordination of research vessel programmes.

4. Proceedings at Council Meetings.

It is understood that there is some dissatisfaction with regard to the treatment of special papers which are at present read by their Authors, leaving little time for discussion. It has been suggested that these papers should not be read, but circulated before the meeting, so that the whole time of the meeting can be devoted to a discussion of their contents.

5. Honoraria.

The payments of honoraria to Conveners, Reporters, Chairmen, etc. has been an intrinsic part of the Council's fabric since the earliest days, and there is no desire unduly to disturb them, especially as the

alternative might be to enlarge greatly the Headquarter's staff and thus increase the cost of administration.

It is necessary to point out, however, that on the present basis of expenditure either more money will have to be forthcoming from the contributing countries (these contributions having remained substantially unaltered since the earliest days) or some reduction will have to be made in the costs of the Council, e. g. in the honoraria now payable.

The reaction of the Delegates and Experts is desired on these points.

Estimate for Pension Fund Account 1947—48.

EXPENDITURE		D. Kr.	INCOME		D. Kr.
Pension to Miss HANSTED as from December 1st 1947		3,051.33	Balance as per July 22nd 1947		108,373.46
			Transfer from revenue		4,300.00
Premiums for pensions:			Personal part of premiums:		
for Mr. SMED	1,921.18		Mr. SMED	554.36	
- Miss CHRISTIANSEN	2,160.99		Miss CHRISTIANSEN	337.81	
- — HEDEGAARD	1,478.12		— HEDEGAARD	316.73	
		5,560.29			1,208.90
Balance as per July 21st 1948		109,810.74	Interests, estimated		4,540.00
		118,422.36			118,422.36

Estimates

of

the International Council for the Exploration of the Sea for the Financial Year 1947–48.

EXPENDITURE

	D. Kr.	D. Kr.
I. Incidentals.		
1. President	6,000.00	
2. Vice-President	3,000.00	
3. Editor of the Journal	4,000.00	
4. Assistance to Editor of the Journal	2,000.00	
5. Chairman of Consultative Committee	4,000.00	
6. Chairmen and Vice-Chairman of Committees	22,000.00	
7. Editor of Statistics	2,000.00	
8. Editor of Plankton Sheets	1,000.00	
		44,000.00
II. Headquarter Staff.		
1. General Secretary	9,000.00	
2. Biological Assistance	3,000.00	
3. 1st Assistant Secretary	9,000.00	
4. 2nd — —	8,088.00	
5. Statistical Secretary I. HANSTED up to $^1/_{12}$, 47	2,920.66	
6. Statistical Secretary E. CHRISTIANSEN up to $^1/_{12}$, 47	2,329.16	
after $^1/_{12}$, 47	4,477.34	
7. Clerical Assistant	6,270.00	
8. — —	4,800.00	
		49,885.16
III. Hydrographical Staff.		
1. Hydrographical Consultant	3,000.00	
2. Hydrographer	11,004.00	
3. Assistance ca.	1,896.00	
4. Hydrographical Assistant	4,800.00	
		20,700.00
IV. Office Expenses		18,000.00
V. Travelling Expenses		22,000.00
VI. Printing and Distribution		50,000.00
VII. Pension Fund		4,300.00
VIII. Extraordinary Expenses		5,000.00
Total Expenditure		213,885.16

RECEIPTS

	D. Kr.	D. Kr.
I. Contributions.		
France	20,000.00	
Great Britain	20,000.00	
Belgium	10,000.00	
Denmark	10,000.00	
Eire	10,000.00	
Finland	5,000.00	
Holland	10,000.00	
Iceland	10,000.00	
Norway	10,000.00	
Poland	10,000.00	
Portugal	10,000.00	
Spain	10,000.00	
Sweden	10,000.00	
		145,000.00
II. Interests on Bank Deposits ca.	700.00	
— - Investments ca.	5,000.00	
		5,700.00
III. Sale of Publications ca.		3,000.00
		153,700.00
Estimated Excess of Expenditure over Receipts to be drawn from the Reserve		60,185.16
		213,885.16

List of Members of Committees.

(One member, only, from each country is entitled to vote.)

Consultative Committee
and
Editorial Committee.

Dr. R. S. CLARK, Chairman,
Mr. G. Rollefsen,
Dr. Å. V. Tåning,
Mr. Á. Friðriksson,
Prof Jean le Gall,
Mr. R. S. Wimpenny,
Dr. E. M. Poulsen,
failing him Dr. Aa. J. C. Jensen,
Dr. Chr. Hessle,
Mr. Helge Thomsen,
Mr. F. S. Russell,
Prof. Sir D'Arcy W. Thompson,
failing him Dr. N. Rosén,
Prof. Knut Dahl,
failing him Mr. Sømme,
Dr. N. A. Mackintosh.

North-Eastern Area Committee.

Denmark:	Dr. Å. V. Tåning,
Éire:	Mr. A. E. J. Went,
England:	Mr. M. Graham,
failing him	Mr. G. Trout,
Finland:	Prof. T. H. Järvi,
France:	Mr. Desbrosses,
Holland:	Dr. B. Havinga,
Iceland:	Mr. Jon Jonson,
Norway:	**Mr. G. ROLLEFSEN, Chairman,**
Scotland:	Dr. H. Wood,
Sweden:	Dr. A. R. Molander,
failing him	Dr. H. Höglund.

North-Western Area Committee.

Denmark:	**Dr. Å. VEDEL TÅNING, Chairman,**
Éire:	Mr. A. E. J. Went,
England:	Mr. M. Graham,
France:	Prof. Jean le Gall,
failing him	Mr. P. Desbrosses or
	Mr. J. Letaconnoux,
Holland:	Dr. B. Havinga,
Iceland:	**Mr. Á. FRIÐRIKSSON, Vice-Chairman,**
Norway:	Mr. F. Devold,
Scotland:	Dr. R. S. Clark,
Sweden:	Dr. K. A. Andersson.

Atlantic Slope Committee.

Denmark:	Dr. Å. V. Tåning,
Éire:	Mr. A. E. J. Went,
England:	Mr. G. A. Steven,
France:	**Prof. JEAN LE GALL, Chairman,**
failing him	Mr. P. Desbrosses, or
	Dr. J. Furnestin, or
	Mr. J. Letaconnoux,
Portugal:	Dr. A. Ramalho,
Spain:	Dr. F. Navarro,
failing him	Prof. E. Jimeno, or
	Prof. R. Montequi, or
	Dr. Juan Cuesta, or
	Dr. N. Menéndez.

Northern North Sea Committee.

Denmark:	Dr. Å. V. Tåning,
failing him	Dr. Aa. J. C. Jensen,
Éire:	Mr. A. E. J. Went,
England:	Mr. R. S. Wimpenny,
France:	Mr. P. Desbrosses,
Holland:	Dr. B. Havinga,
Iceland:	Mr. Á. Friðriksson,
Norway:	Mr. E. Lea,
failing him	Mr. F. Devold,
Poland:	Dr. W. Cieglewicz,
Scotland:	**Dr. R. S. CLARK, Chairman,**
Sweden:	Dr. A. R. Molander.

Southern North Sea Committee.

Belgium:	Prof. H. J. Koch,
Denmark:	Dr. Å. V. Tåning,
failing him	Dr. Aa. J. C. Jensen,

England: **Mr. R. S. WIMPENNY, Chairman,**
failing him Mr. M. GRAHAM,
France: Mr. P. DESBROSSES,
Holland: Dr. B. HAVINGA,
Norway: Dr. JENS EGGVIN,
failing him Mr. G. ROLLEFSEN,
Poland: Dr. M. BOGUCKI,
Scotland: Dr. H. WOOD,
Sweden: Dr. A. R. MOLANDER.

Transition Area Committee.

Denmark: **Dr. E. M. POULSEN, Chairman,**
Dr. AA. J. C. JENSEN,
Norway: Dr. ALF DANNEVIG,
Prof. JOHAN T. RUUD,
Mr. B. RASMUSSEN,
Poland: Dr. M. BOGUCKI,
Dr. W. MAŃKOWSKY,
Sweden: Dr. K. A. ANDERSSON,
Dr. A. R. MOLANDER,
Prof. HANS PETTERSSON,
Dr. N. ROSÉN,
Dr. O. NYBELIN,
Dr. H. HÖGLUND.

Baltic Area Committee.

Denmark: Dr. AA. J. C. JENSEN,
Dr. E. M. POULSEN,
Finland: Prof. T. H. JÄRVI,
Dr. G. GRANQVIST,
Poland: Dr. M. BOGUCKI,
Dr. Z. MULICKI,
Sweden: **Dr. CHR. HESSLE, Chairman,**
Dr. K. A. ANDERSSON, or
Dr. A. R. MOLANDER, or
Dr. H. ALANDER.

Hydrographical Committee.

Belgium: Prof. H. J. KOCH,
Denmark: **Mr. HELGE THOMSEN, Chairman,**
Prof. MARTIN KNUDSEN,
Éire: Mr. A. E. J. WENT,
England: Mr. J. R. LUMBY,
Finland: Dr. G. GRANQVIST,
France: Admiral DYÈVRE,
Holland: Mr. H. KEYSER,
Iceland: Dr. H. EINARSSON,
Norway: Dr. JENS EGGVIN,
Poland: Dr. M. BOGUCKI,
Scotland: Dr. JOHN B. TAIT,
Spain: Dr. NICANOR MENÉNDEZ,
Commander FERNANDO BALEN,
Sweden: Prof. N. O. ZEILON,
Prof. HANS PETTERSSON.

Plankton Committee.

Belgium: Prof. H. J. KOCH,
Denmark: Dr. P. JESPERSEN,
Prof. E. STEEMANN NIELSEN,
Mr. J. GRØNTVED,
Éire: Mr. G. P. FARRAN,
England: **Dr. F. S. RUSSELL, Chairman,**
Mr. M. GRAHAM,
Finland: Prof. T. H. JÄRVI,
France: Dr. L. FAGE,
Mr. F. BERNARD,
Holland: Dr. B. HAVINGA,
Iceland: Dr. H. EINARSSON,
Norway: Mr. KR. FR. WIBORG,
Dr. T. BRAARUD,
Poland: Dr. M. BOGUCKI,
Dr. W. MAŃKOWSKY,
Scotland: Dr. R. S. CLARK,
Spain: Dr. JUAN CUESTA,
Dr. M. MASSUTI,
Sweden: Dr. HANS HÖGLUND.

Statistical Committee.

Chairman, Prof. Sir D'ARCY W. THOMPSON,
failing him **Dr. NIELS ROSÉN,**
Belgium: Mr. CH. GILIS,
Denmark: Mr. AA. J. C. JENSEN,
Éire: Mr. A. E. J. WENT,
England: Mr. M. GRAHAM,
Finland: Prof. T. H. JÄRVI,
France: Mr. M. TERRIN,
Holland: Mr. G. J. LIENESCH,
Iceland: Mr. Á. FRIÐRIKSSON,
Norway: Prof. JOHAN T. RUUD,
Poland: Dr. F. LUBECKI,
Scotland: Prof. Sir D'ARCY W. THOMPSON,
failing him Dr. R. S. CLARK,
Spain: Captain PEDRO LAPIQUE, or
Dr. LUIS BELLON,
Sweden: Dr. NIELS ROSÉN.

Salmon and Trout Committee.

Denmark: Dr. E. M. POULSEN,
failing him Mr. C. V. OTTERSTRØM,
Éire: Mr. A. E. J. WENT,
England: Mr. F. T. K. PENTELOW,
Finland: Prof. T. H. JÄRVI,
France: Mr. LARRIEU,
failing him Mr. R. VIBERT,
Holland: Mr. G. J. LIENESCH,
Iceland: Dr. ÞOR GUÐJONSSON,
Norway: **Prof. K. DAHL, Chairman,**
failing him Mr. S. SØMME,
Poland: Dr. ST. ZARNECKI,
Scotland: Mr. P. R. C. MACFARLANE,
Spain: Dr. JUAN CUESTA,
Sweden: Dr. NIELS ROSÉN,
failing him Dr. K. A. ANDERSSON.

Whaling Committee.

Dr. N. A. MACKINTOSH, Chairman,
Prof. J. LE GALL, or
Mr. M. TERRIN,
Prof. Sir D'ARCY W. THOMPSON,
Dr. Å. V. TÅNING,
Dr. J. T. RUUD,
Dr. J. BOROWIK,
Mr. G. J. LIENESCH,
Dr. ÁRNI FRIÐRIKSSON.

Finance Committee.

Prof. JOHAN HJORT, Chairman,
Prof. MARTIN KNUDSEN,
Dr. H. BLEGVAD,
Dr. J. BOROWIK,
Dr. F. NAVARRO,
Dr. A. RAMALHO.

Sub-Committees.

Sub-Committee on the Faroe Question.

Dr. Å. VEDEL TÅNING, Chairman,
Mr. M. GRAHAM,
Dr. J. LE GALL,
Dr. B. HAVINGA,
Mr. F. DEVOLD,
Dr. R. S. CLARK,
Mr. A. FRIÐRIKSSON.

Sub-Committee for the Standardization of Zooplankton Methods.

Mr. F. S. RUSSELL, Chairman,
Dr. P. JESPERSEN,
Mr. R. S. WIMPENNY,
Mr. J. H. FRASER,
Dr. H. HÖGLUND,
Mr. K. F. WIBORG.

Sub-Committee for Organization of Combined Hydrographical-Biological Investigations.

Dr. J. EGGVIN, Chairman,
Dr. T. BRAARUD,
Prof. N. O. ZEILON,
Mr. F. S. RUSSELL,
Mr. H. THOMSEN,
Mr. J. R. LUMBY,
Dr. J. B. TAIT,
Mr. J. SMED, Secretary.

ENGLISH VERSION

Special Scientific Meetings.

A. The Effect of the War on the Stocks of Commercial Fishes.

Chairman: Dr. R. S. Clark.
October 24th, 1947, at 9.30 a. m.

At the request of the Convener, Dr. R. S. Clark, papers had been circulated in advance of the meeting. The Chairman invited the authors to explain to the meeting what were the main points brought out in their papers.

During the morning session, authors, or their representatives, spoke on the subject of their papers, every author being given a second opportunity in the later part of the morning. In the afternoon, the reporter, Mr. Michael Graham, gave a critical résumé of all the papers presented, and of such other relevant papers as had been published already.

The following papers had been submitted:

G. Rollefsen: The Arcto-Norwegian Stock of Cod.
Arvid R. Molander: Swedish Witch Fishery in the Skagerak and North Sea.
Arvid R. Molander: Swedish Ling Fishery before and since the war.
Z. Mulicki: Changes in the Composition of the Flounder Stock in the Gulf of Gdansk during the War.
Aage J. C. Jensen: The Stocks of Plaice in the North Sea and the Transition Area during the War.
R. Letaconnoux: Effets de la Guerre sur la Constitution des Stocks de Poissons.
B. B. Parrish: The Haddock Stocks in the North Sea during the second half of 1945.
A. R. Margetts and S. J. Holt: The Effect of the 1939—1945 War on the English North Sea Trawl Fisheries.

The papers presented will appear in a special volume of the series Rapp. et Proc.-Verb.

B. The Rearing of Fish.

Chairman: Dr. R. S. Clark.
October 26th, 1947, at 10.00 a. m.

The Convener, Mr. Gunnar Rollefsen, had suggested the following four points for discussion and had expressed the hope that the meeting, on the basis of the information received, might arrive at recommending certain methods and principles for further work.

1) Can any effect of the planting of newly hatched fry be shown?

2) Can any effect of the planting of reared fry be shown?

3) To what extent has heredity and environment affected the fry?

4) Have any recent examinations been made of the chromosome number of fish with larger spawn production?

A fifth question was raised during the meeting:

5) Are there any other suitable food organisms than *Artemia salina*?

The contributions from the following members were discussed:—

M. Gunnar Rollefsen, Dr. Alf Dannevig, Dr. Anton Fr. Bruun, Dr. Å. Vedel Tåning, and Dr. O. Nybelin.

The papers will be published in the series Rapp. et Proc.-Verb. along with the papers mentioned above (A).

Report and Recommendations of the Consultative Committee.

Chairman: Dr. R. S. Clark.

First sitting: Monday 20th October 1947 at 3.30 p. m.; second sitting: Thursday 23rd at 5.00 p. m.; third sitting: Saturday 25th at 10.00 a. m.

Present: All members except Sir D'Arcy Thompson and Mr. F. S. Russell, for whom Dr. Rosén and Dr. Jespersen deputised respectively.

I. Proceedings.

1) The Chairman in opening the meeting welcomed the members and referred to the unavoidable absence of Sir D'Arcy Thompson, through illness, and of Mr. F. S. Russell.

2) Programme of Meetings. The time for the meeting of the Southern North Sea Committee was altered to 3.00 p. m. on Tuesday 21st instead of 4.00 p. m.

The proposal for a lecture on the salmon of Norway was referred to the Salmon and Trout Committee.

3) Progress Report. The following report for August 1946 to October 1947 was discussed in detail.

I. Protection of Fish.

(a) A meeting of experts to consider measures for the protection of the stock of *Pandalus borealis*, *Nephrops norvegicus* and *Homarus vulgaris* will be held on October 18th. Denmark, Norway, Poland and Sweden have been invited to send representatives.

(b) Closure of Faxa Bay. The Sub-Committee having finished its work was dissolved at the last meeting of the North-Western Area Committee. The report of the Sub-Committee transmitted to the Consultative Committee in August last is now being printed—see Publications below.

II. Special Scientific Meetings.

In Stockholm it was agreed to hold two meetings:

(a) The meeting to discuss the Effect of the War on the Stocks of Commercial Food Fishes, to take place on Friday the 24th. The Convener, Dr. Clark, has desired that the meeting itself should be wholly devoted to discussions. Typescripts of the various papers to be laid before the meeting are therefore being circulated to delegates and experts attending the Council Meeting. Manuscripts have been received from

Denmark: Jensen, on Flatfishes;
England: Margetts and Holt, on:—
(1) North Sea Trawl Fisheries,
(2) The English Plaice Fishery;
France: Letaconnoux, Various Fishes;
Norway: Rollefsen, on the Arcto-Norwegian Stock of Cod;
Poland: Mulicki, on Flounder;
Scotland: Parrish, on Haddock;
Sweden: Molander, on Witch and Ling.

(b) The meeting to discuss the Rearing of Fish, to take place on Sunday the 28th. The Convener, Mr. Rollefsen, has sent a programme and agenda which are being circulated to delegates and experts.

III. Special Work.

Dr. Hodgson's Herring Charts. Dr. Hodgson reports having received all the information from every country except Sweden and Ireland; he adds that he has consulted the Hydrographic Department of the Admiralty regarding charts and that they can let him have a very good one which would serve the purpose. They might also be able to undertake the printing of the Atlas if asked to do so.

IV. Sub-Committees.

(a) Combined hydrographical-biological Investigations. A meeting was held at Göteborg on February 27th which was attended by Messrs. Eggvin, Hans Pettersson, Helge Thomsen and N. Zeilon. A preliminary programme for the observations to be taken was accepted. A summary of the Swedish results has just been received at the office.

(b) Standardisation of Plankton Methods. A Sub-Committee has been set up, consisting of Messrs. F. S. Russell (Chairman), Wimpenny, J. H. Fraser, H. Höglund, Fr. Wiborg and P. Jespersen. The Chairman has asked the members to inform him of their experiences with pumps, and the replies which have been received from all the members are being circulated.

V. Publications.

Since last year printing difficulties have unfortunately further increased; a printers' strike from March to medio July interrupted all publications and it took some time until work was resumed at full capacity.

(a) Rapp. et Proc.-Verb. Vol. Nos. 117 (Proc.-Verb. from Stockholm and Adm. Report) and 118 (Scientific Meeting 1946) were distributed in September; Nos. 119 (Prof. Järvi's Salmon Report) and 120 (Faxa Bay Report) are in the Press, partly in first, partly in second proof; the proof of the Administrative Report for 1946 will be ready for distribution at the Council Meeting.

(b) *Annales Biologiques* Vol. II was distributed in September. The proof of Vol. III will be ready for distribution at the Council Meeting.

(c) *Journal du Conseil*, XV, 1, is being distributed. The material for No. 2 has been received from the Editor and is being sent to the printers.

(d) *Bulletin Hydrographique*. Some material for the 1940—46 issue has been received and prepared in manuscript form, but much material is still lacking.

(e) *Bulletin Statistique*. The proof print of the issue for 1939 is expected to be ready for distribution to the members of the Statistical Committee in October, while the compiling of the 1940—45 issue is well advanced.

(f) *Plankton Sheets*. A first proof has been received from the printers of Sheets Nos. 8—10, Pteropoda Thecosomata, by J. J. TESCH; Thaliacea I and II by J. H. FRASER.

The office has made every effort to ensure prompt publication of the Council's papers. The Faxa Bay report, by the kind intervention of Dr. K. A. ANDERSSON, has been accepted for printing by a Swedish firm in Stockholm, and the report of the Scientific Meeting has been reproduced photostatically.

It was agreed that the question of the printing and of the size of the Herring Charts (see point III) should be left in the hands of the Chairman, Dr. HODGSON and the General Secretary.

4) Notes of the Agenda for the Current Council Meeting. The various items under this heading were discussed provisionally and tentatively. It was decided to ask the Committees to consider all the points and transmit their views through their separate Chairmen at a special meeting of the Consultative Committee on Thursday 23rd October at 4.30 p. m.

The views of the various Committees on the Notes for the Agenda were discussed at the second sitting and recommendations were made as set out in II, 1 below.

5) At the third sitting the reports of the Committees which had been distributed were discussed and Recommendations II, 2—6 were adopted.

6) The General Secretary appealed to all Chairmen of Committees to see that the rules of publication be strictly adhered to as much extra work had devolved upon the Secretariat as a result of laxity in this respect.

7) Dr. CLARK was re-elected Chairman for the ensuing year.

II. Recommendations.

1. Notes for the Agenda.

As a result of the discussion on the Committees' reports the following recommendations were submitted to the Bureau.

(a) Date of Annual Meeting. October (1st half).

(b) Frequency of Council Meetings. Annual.

(c) Functions. Nor formal change, i. e., no restriction of subject matter.

Close co-ordination and the bringing of general technical matters to the attention of the Committees were advocated so that special scientific meetings could be held, if and when necessary.

(d) Procedure. Every effort should be made to circulate papers well in advance of the Council Meeting, so as to avoid taking up the time of Committees by papers having to be read.

(e) Honoraria. No reduction.

2. Programmes.

The broad lines of the general work and the ships' programmes of the participating countries should be discussed each year, first by the Committees and then by a special Meeting of the Consultative Committee with a view to the most efficient co-ordination of plans.

3. Special Scientific Meetings.

(a) It was recommended that there should be a Special Scientific Meeting to be held at the next Council Meeting in Copenhagen on "Climatic Changes in the Arctic in Relation to Plants and Animals" and that Dr. AHLMANN should be invited to address the meeting as a guest of the Council.

(b) The Committee also recommended that a Special Scientific Meeting to be held at the next Meeting of the Council should deal with the comparative efficiency of fishing craft, their gear and modifications of gear and that Dr. BOROWIK should be the Convener.

4. Meeting of Experts.

(a) In connection with a request from the Hydrographic and Plankton Committees it was decided to recommend that the Chairmen of both Committees should represent the Council at the Meeting of the International Association of Oceanography in Oslo in August 1948.

(b) A meeting on methods for studying sardine and other clupeoid fishes (except herring), having already been agreed upon, the Committee recommended that representatives from Portugal, Spain, France, England, Norway and Sweden should be invited to take part.

(c) It was recommended that a Sub-Committee of the Statistical Committee consisting of representatives of the Council, the Fisheries Statistical Service of the principal countries concerned with fisheries and the Fisheries Division of F.A.O. should meet in Copenhagen early in 1948. They should consider the present method of collecting statistics and the need for adapting such statistics for biological purposes. The Deputy Chairman of the Statistical Committee (Dr. ROSÉN), Dr. BOROWIK and Mr. GRAHAM were recommended for inclusion in this Sub-Committee.

(d) It was also recommended that a meeting of the Sub-Committee on the Faroe Question be held at Copenhagen two days in advance of the next Council Meeting.

5. Action for Council.

(a) In agreement with the view of the North-Eastern Area Committee, the Consultative Committee requested that the Council should approach

the Russian authorities through the Danish Foreign Office to call their attention (1) to the collection of Russian fish marks in the possession of the Norwegian Government; (2) to a chart prepared by Mr. ROLLEFSEN showing the places where cod marked by Russian scientists had been re-captured by Norwegian fishermen; (3) the desirability of interchanging information on the changes in northern fish stocks.

(b) The Consultative Committee thought that the findings of the Transition Area Sub-Committee on Pandalus, Homarus and Nephrops were of substantial importance and recommended that the Council should ask the Danish Foreign Office to draw the attention of the countries concerned to these results.

(c) The Committee also recommended that the General Secretary should request the various countries to deliver their statistical information to the Council with much greater expedition.

6. Publications.

It was decided to recommend that the two papers suggested by the Hydrographic Committee should be published by the Council.

The Committee also recommended that the publication of the Plankton Identification Sheets should be continued.

Reports and Programmes of Area Committees.

North-Eastern Area Committee.

Chairman: Mr. G. Rollefsen.

The Committee met on October 21st, 1947, at 9.30 a. m.

I. Proceedings.

1) The Administrative Report for 1946 was adopted.

2) The revised list of members was accepted.

3) Reports on the Stocks of Cod in the North-Eastern Area and adjacent Waters were given by Mr. G. Rollefsen, Mr. Árni Friðriksson and Mr. Paul M. Hansen. The reports and the ensuing discussion made it clear that one and the same year-class could dominate in the Iceland-Greenland stock of cod, while in the Arcto-Norwegian cod stock other year-classes were dominant in the same years.

A report was also given by Mr. F. Devold on the sea temperature and fishing conditions in Spitzbergen-Bear Island area showing that the waters covering the banks were much colder during the last two years than it was the year before the war. Mr. G. Dannevig gave a short account of recent marking experiments in Norway on skrei. Fish liberated at Lofoten showed a distinct tendency to migrate to the eastern part of the Barents Sea.

A discussion on the marking methods and type of marks stressed, among other things, the importance of the colour and visibility of the marks.

4) Mr. Rollefsen was re-elected Chairman for the ensuing year.

II. Notes on the Agenda for the Current Council Meeting.

1) Date of Annual Meeting. The Members of the Committee stated their views as follows:—

Denmark: October—February.
England: May.
Iceland: October best but might consider May.
Norway: October.
Scotland: May.
Sweden: March—April, but might consider October.

2) Frequency of Meetings.

Denmark: Every year preferable, but if every second year special scientific meeting.
England: Every second year preferable, but special meeting every year for exchange of information among the younger scientists.
Finland: Every year.
France: Every year, but would support England's view.
Iceland: Every year.
Norway: Every year.
Scotland: Every year.
Sweden: Every year.

3) Function of Area Committees. A discussion took place in which it was emphasized that any restriction of the subject matters considered in Area Committees should be completely rejected; but that it is desirable to make time for closer co-ordination of research programmes. A difficulty, which was not overcome, was seen in bringing general technical matters to the attention of all members of the Council; but it was thought that large issues of general technical interest should mainly be put to special scientific meetings.

4) Proceedings at Council Meetings. It was generally agreed that papers, if possible, should be circulated before the meeting, but it was recognized that reports of importance which could not be printed for circulation beforehand might be read.

5) Honoraria. The Committee considered whether the expected financial difficulties of the Council had best be met by reduction of honoraria. It was generally felt that the honoraria were justifiable and useful, but could be sacrificed if the national contributions could not be increased, or if some other effective measure could not be found.

III. Programme of Work.

It was agreed that the programme of work should be settled between the members of the Committee.

IV. Recommendation.

It was recommended that the Council should get in touch with the Russian authorities through the Danish Foreign Office to call their attention (1) to the collection of Russian fish marks in the possession of the Norwegian government, and (2) to a chart prepared by Mr. ROLLEFSEN showing the places of capture of cod marked by Russian scientists and recaptured by Norwegian fishermen, which chart would later be furnished by Mr. ROLLEFSEN and attached to the official correspondence. It was recommended that the Council should ask the Danish Foreign Office to emphasize the common interest of the U. S. S. R. and of other nations in the furtherance of understanding of the stocks of fish in the Arctic regions and to request that the Russian authorities would make arrangements to return fish-marks to their country of origin, and to receive fish marks from other countries.

North-Western Area Committee.

Chairman: Dr. Å. VEDEL TÅNING.
Vice-Chairman: Mr. ÁRNI FREÐRIKSSON.
The Committee met on October 22nd, 1947, at 9.30 a. m.

I. Proceedings.

1) The Chairman opened the meeting and expressed the hope that more material and contributions, especially for the *Annales Biologiques* might be obtained in the next year. The Administrative Report was adopted. He then mentioned three recommendations passed by the Committee at their last meeting, in Stockholm in 1946, concerned with the halibut, the Faxa Bay question and the Greenland cod. Mr. DEVOLD gave an account on the halibut, and recommended that marking of young halibut, collecting of statistics and otoliths and an examination of racial characters should be carried out. The Chairman distributed part of the second proof of the Faxa Bay Report which is to be printed before the end of the year and informed the meeting that Mr. PAUL M. HANSEN's paper on the Greenland cod would appear during the winter.

2) Communications.

(a) Mr. P. M. HANSEN gave an account on the stock of the Greenland cod, its fluctuations and growth-rate during recent years. The rate of growth had been decreasing, especially in North Greenland. Norway pout (*Gadus poutassou*) and lemon sole had been observed in Greenland waters during recent years and spawning of red fish had taken place in South Greenland fjords.

(b) Mr. Á. FRIÐRIKSSON gave information on the north-coast herring of Iceland during the last three years and explained why these had been very poor fishing years.

(c) Mr. FRIÐRIKSSON read a paper dealing with the fishing grounds and the biology of the red fish in the waters around Iceland, based on observations made in the years 1937—38.

(d) The Chairman outlined the distribution of the red fish larvae in the north-western Atlantic and gave a description of the very extensive breeding areas of red fish in this vast region, where he had been working on the "Dana" during the summer of 1947.

3) The Chairman, Dr. Å. V. TÅNING, and the Vice-Chairman, Mr. Á. FREÐRIKSSON, were unanimously re-elected for the ensuing year.

II. Notes on the Agenda for the Current Council Meeting.

Statement on dates, frequency of meetings, salaries etc. were made and submitted to the Consultative Committee.

1) Preference for October.
2) Majority for annual meetings.
3) Liberty of action.
4) Papers to be circulated in good time before the meetings.
5) Higher contributions.

III. Programme of Work.

Work will be continued on the same lines as in previous years, and special attention will be paid to the stocks of the five most important food fishes: cod, haddock, plaice, halibut and herring. It was agreed that research work on the halibut should be carried out in accordance with the principles described by DEVOLD, over the whole geographical range of this species in the North Atlantic. The work should involve racial investigations, marking experiments (especially of small halibut), otolith samplings for age determination, general statistics on the catches including areas and size categories and the determination of spawning areas and the spawning time.

Owing to the uncertainty concerning the number of vessels which would be available for marine research during the coming year, it was decided that the Chairman should ask the various countries for

details of their programmes of cruises in 1948, to be submitted by the end of January 1948. It was agreed that all vessels, working in the area, should use every opportunity to collect material in relation to hydrographical changes, and also general biological material dealing with the various aspects of these problems.

It was emphasized that it was of great material value to the fishery in the area that the influence of the present climatic changes on the distributions, migrations, spawning conditions and density of marine animals should be studied; therefore it was recommended that every opportunity should be used by research vessels and other ships to carry out biological and ecological work, especially in the waters north of the Faroes, north and east of Iceland and in the Denmark and Davis Straits. With reference to this very important question the Committee adopted the recommendations below (V, 1).

IV. The Faroe Question.

The Sub-Committee met at 3 o'clock on October 22nd. The Chairman reported in general on the work which had been carried out up till now, with special reference to recent years. It was decided that, during the winter, Mr. GRAHAM should prepare a report on fish populations in this sub-area based on the statistics available, and the Chairman promised to furnish the Committee with information about the concentration of fishing vessels north and west of the Islands before next meeting. Moreover it was left to the Chairman to prepare a progress report on this question, to be submitted to the members of the Committee (See Rec. V, 2).

V. Recommendations.

It was recommended that:

1) The problem of climatic changes in the Arctic being one of the two most pressing problems in the Council's area, the collection of all possibly relevant information should begin immediately, to avoid missing important information. In order to carry this out it is proposed that the Chairmen of the North-Eastern and North-Western Area Committees be requested to act as editors of such material for the forthcoming year, and to submit a summary of the results at a Special Scientific Meeting of the next Council Meeting. It is also proposed that Prof. AHLMANN be invited to address such a special scientific meeting—the subject of the meeting being "Climatic Changes in the Arctic in Relation to Plants and Animals."

That the Chairman should send through the Bureau requests to suitable bodies for information relevant to this subject, mentioning that short abstracts of information on terrestrial animals and plants would also be of interest.

2) The Sub-Committee on the Faroe Question should meet two days before the next Council meeting to prepare the final report to be put before the Council.

Atlantic Slope Committee.

Chairman: M. JEAN LE GALL.

The Committee met on October 21st, 1947, at 2.30 p. m., and on October 22nd at 9.30 a. m.

I. Proceedings.

1) The Chairman opened the meeting, welcomed the Delegates and Experts, and thanked the members for the support they had given to the Committee's work during the year 1946—1947.

2) The Administrative Report was adopted.

3) The following communications were read and discussed.

A. Hydrology.

(a) Mr. LACOMBE: The propagation of sound in the sea and acoustic sound rangings.

(b) Mr. BERNARD: Stratification of the waters in the Mediterranean.

(c) Mr. J. FURNESTIN: Observations on the sea temperature in the neighbourhood of Morocco[1]).

[1]) To appear in the Ann. Biol. for 1947 (Vol. IV).

B. Biology.

Clupeoids.

(d) Mr. J. FURNESTIN: Observations on the biology of the Moroccan sardine (*Sardinia pilchardus* WALBAUM).

Scombrids.

(e) Mr. J. LE GALL: A note on the growth of the mackerel (*Scomber scombrus* L.). Short accounts, followed by discussions were given on the biology and the behaviour of various Atlantic tunnies. (Messrs. J. FURNESTIN, J. LE GALL, F. DE P. NAVARRO, A. RAMALHO, P. DESBROSSES.)

Gadoids.

(f) Mr. J. LETACONNOUX: Measurements and observations on the influence of intensive fishing on the composition of the stock of the hake (*Merluccius merluccius* L.).

(g) Mr. J. LETACONNOUX: Preliminary results of

some observations on the biology of the cod (*Gadus morrhua* L.) of the Western Approaches.

(h) Mr. LE GALL: Hydrological and biological observations on the cod fishing grounds at Newfoundland.

Pleuronectids.

(i) Messrs. J. LE GALL and DEGAND: Preliminary note on the halibut (*Hippoglossus vulgaris* Flemming) of the Celtic Slope.

C. Bibliography.

The various publications dealing with the results of research in biology, hydrobiology, and physiology carried out within the area of the Atlantic Slope Committee will continue to be recorded under this heading in the Administrative Report.

D. Reports.

(a) Professor M. FONTAINE: The function of the thyroid in fishes. The Committee expressed the desire that this paper should be published in the *Journal du Conseil*.

(b) Messrs. RENOU and TCHERNIA: Account of the research work carried out by the French Navy on the location of fish shoals by ASDIC.

4) Mr. J. LE GALL was re-elected Chairman for the ensuing year.

II. Notes on the Agenda for the Current Council Meeting.

1) Date of the annual meetings. Spain, France and Portugal would prefer the month of May; England, October without having serious objections against May; Denmark maintains its preference for a meeting in Winter.

2) Frequency of the Council Meetings. The Committee adopted the proposal of Dr. NAVARRO (Spain), which was supported by France and Portugal: that a general assembly be held every second year, and annual meetings of the Committees in countries appointed by them. The expenses to be borne by the States represented on the Committees.

3) Functions and work of the Committees. The Committee took due note of the suggestions put forward in the "Note" and will act in accordance therewith.

4) Honoraria. Under the prevailing financial difficulties of the Council the Chairman proposed that honoraria be sacrificed or reduced, as had been suggested by other Committees.

After discussion the Committee adopted the following proposals which had been made by Dr. RAMALHO:

(a) An increase in the contribution of each country according to the number of Committees of the Council on which it is represented.

(b) A decrease, if possible, in the number of geographical Committees.

(c) The admission to the Council of the Mediterranean countries (suggestion of Dr. NAVARRO).

III. Programme of Work.

A. France, Portugal and Spain have established a programme of close collaboration for the study of the general hydrology of the Atlantic Slope, from the Western Approaches to the Canarian Straits. They will also study jointly the biology of the sardine, the mackerel and various species of tunny of the Western Approaches, the Bay of Biscay, the Spanish coast, the coasts of Morocco and Mauretania, the Straits of Gibraltar and the eastern Mediterranean.

B. Meeting at Biarritz. The Chairman confirmed the invitation of the city of Biarritz who will receive the experts of the Council appointed for the study of the sardine and other clupeoid fish (herring excepted).

The species to be studied at the meeting will therefore be: sardine (*Sardinia pilchardus*), sardinella (*Sardinella aurita*), sprat (*Clupea sprattus*), anchovy (*Engraulis encrasicholus*) and the genus Alosa.

The programme for the meeting has been considered and finalised.

IV. Recommendations.

The Atlantic Slope Committee recommended:

1) That the work of the Committee be extended to the zone of the Straits of Gibraltar and the eastern Mediterranean;

2) That the meeting of experts studying the sardine and other clupeoid fish which should have been held at Biarritz in October 1947 be postponed to the end of April 1948.

Northern North Sea Committee.

Chairman: Dr. R. S. Clark.
The Committee met at 9.30 a. m. on October 23rd, 1947.

I. Proceedings.

The following changes were made in the membership of the Committee:

Mr. Went for Mr. Farran (Éire),
Dr. Cieglewicz for Dr. Lubecki (Poland);
Mr. Friðriksson (Iceland), new member.

Dr. Devold will deputise for Mr. Lea (Norway),

Copies of the Administrative Report for 1946 (see this volume, part II) and of the Chairman's annual survey in *Annales Biologiques*, Vol. III, were laid on the table and were considered as read.

The following papers in typescrift were circulated among members of the Committee:—

"Scottish Hydrographical Work in 1947" by J. B. Tait.

"The Scottish Macroplankton, April—July, 1947" by J. H. Fraser.

Dr. Tait outlined the main features of his paper and considerable discussion ensued among members and guests on a number of hydrographical points, and their application to biological conditions during the spring and summer months particularly. The paper will be published in due course when the work for 1947 has been completed.

In the absence of Dr. Fraser the Chairman referred briefly to his paper on recent plankton results emphazising the close relationship between the results described and the unusual hydrographical conditions prevailing.

Dr. R. S. Clark was re-elected Chairman for the ensuing year.

II. Notes on the Agenda for the Current Council Meeting.

The following answers were agreed upon for transmission to the Consultative Committee.

1) October.
2) Annual.
3) No formal change, i. e., agreement in principle with the note.
4) Acceptance of the note.
5) No interference with honoraria. It was believed that greater expense would be incurred in supplementing Headquarter Staff if honoraria were cut.

III. Programme of Work.

The Chairman and others stressed the value of increased co-operation among member countries who operate with research or commercial vessels in the northern area. The proposal was put forward that the Chairmen of the Northern and Southern North Sea Committees should formulate a plan of research for the whole of the North Sea. This plan should be distributed among all participating countries, and after replies were received a detailed scheme would be prepared and circulated.

Work within the area was proposed as follows:—

Denmark: two cruises of the "Dana" between April and September.

England: overlapping in the Dogger Bank region.

France: observers on trawlers in the winter season, and in conjunction with the French Navy on ASDIC experiments on the northern herring fishing grounds.

Norway: hydrographic sections on the "Armauer Hansen"; ASDIC experiments in the north-eastern North Sea.

Sweden: hydrographic and plankton sections in conjunction with Scotland, Norway and Denmark.

Southern North Sea Committee.

Chairman: Mr. R. S. WIMPENNY.

The Committee met at 3.30 p. m. on October 21st, 1947, and at 4.00 p. m. on October 24th.

I. Proceedings.

After welcoming members the Chairman noted with regret that Belgium was not represented this year. It was then announced that there would be a meeting of the English, French and Dutch experts at 4 p. m. on October 24th to discuss programmes concerning work at the eastern end of the Channel and in the neighbouring North Sea. This was necessary as England could not attend a meeting of French, Dutch and Belgian experts which it had been intended to hold in Paris between November 18th and 20th.

The Chairman then referred to the work done in the area as indicated in the Administrative Report and *Annales Biologiques* for 1946 and brought his account to date respecting his own country, stressing the important effects of both intensity of fishing and of fluctuations. There had been a marked decline in the catch-rate per fishing unit for most species of trawl-fish investigated except the whiting and in the late winter of 1946—1947 there had been a considerable mortality of some species, particularly sole, as a result of exceptionally low temperatures. Experiments on comparative fishing had been carried out in fulfilment of last year's recommendation and a short account of an experiment in which "Dana" and "Platessa" took part was circulated to members.

Dr. TÅNING reported on his country's work in 1946 and said that the rate of returns of marked fish found subsequently suggested that in two years the plaice stock in the southern North Sea would be back to its pre-war level. During the summer of 1947 the "Dana" had visited the southern North Sea carrying out hydrographic and biological observations.

Mr. HERMANN then gave an account of the hydrographic conditions found in the area. It appeared that unusually cold bottom water had persisted in the east, central and southern North Sea in 1947 until August. Further observations on the severity of the low temperatures in the late winter and early spring of 1947 were made by Dr. JENSEN, who pointed out that there had been a big mortality of sole and turbot off NW. Jutland.

Dr. HAVINGA stated that Holland hoped to have a research ship in the near future and that in the meanwhile shore work was continuing. The back-calculation of the growth of plaice from otolith rings was proving very difficult. He then gave a short account of the catches of Dutch steam-trawlers in the period 1945—1947. Generally he concluded that the density of the demersal stock had declined considerably although this was masked by the enormous recruitment of young haddock and by abnormal catches of cod and whiting in the winter 1946—1947.

After discussing the question of statistics it was decided that the Statistical Committee should be asked whether it would be possible to give the position of capture and the weights per unit of time in respect of the figures collected by all countries engaged in the demersal fishery of the North Sea.

Mr. R. S. WIMPENNY was re-elected Chairman for the ensuing year.

II. Notes on the Agenda for the Current Council Meeting.

The following majority results were obtained:

Date of annual meeting: October.

Frequency of Council Meetings: Annual.

Functions of Area Committees: It was agreed that in order to avoid overlapping when business of substantial importance to more than one committee was likely to occur a Special Meeting should be requested.

Proceedings of Council Meetings: It was agreed that papers should be circulated before meetings and that members should produce them in good time.

Honoraria: If the financial position of the Council warranted it there should be reduction, but before this is done the participating countries should be asked to increase their contributions.

III. Programme of Work.

A discussion took place on programmes both for ships and work and it was decided that much closer co-ordination was desirable. To do this members agreed to circulate a broad general and preliminary programme of their plans for the coming year. This would then be amended if necessary to avoid overlapping and to get maximum effort at the right time and place. In addition to this the short-term programmes of ships and programmes for special subjects would be circulated as necessary.

The following general programmes were agreed upon:

Belgium: Representative not present but it was expected that M. GILIS would continue his work on the spent-herring fishery of the Belgian coast, and it was decided to ask for the resumption of temperature and salinity observations from the West-Hinder.

Denmark: A cruise will be made in the spring and once at the end of the summer when biological, hydrographical and

comparative fishery observations would be carried out if possible in conjunction with other research ships of North Sea countries. The Waddensea investigations, marking experiments and market measurements will be continued. The dimensions of the Jacobsen trawl will be communicated to Holland, Belgium and England in order that a co-ordinated investigation on the 0—II group plaice might be undertaken.

It is hoped that the work on the stock of plaice and plaice food on the Horn's Reef ground would be resumed.

England: Plaice marking will be continued in specified areas where up to 5,000 fish will be marked in each place by the M.F.V. "Platessa" and the R.-S. "Sir Lancelot". Both ships will continue tests of fishing efficiency and gear both with each other and with the ships of other members of the Committee. The "Sir Lancelot" will make extensive plaice-egg cruises from December to March, and cruises off the English east coast—in the central North Sea to make plankton, hydrographic and general observations between June and October. In October and November this ship will cover the East Anglian herring grounds in order to watch the plankton conditions.

Both English ships will be employed at different times to make the monthly observations on the Flamborough line of stations.

Market measurements of demersal and pelagic fish will continue, special attention being given to the plaice stock. The M.F.V. "Onaway" will cover the chief herring grounds and test gear in connection with the capture of pelagic fish. The exchange of herring scales and information with M. Ancellin and M. Gilis will continue. Plaice otoliths and market measurements of soles will be exchanged with Dr. Havinga.

France: Early in the year it was hoped that France would undertake the salinity determinations of the Newhaven—Dieppe line and that later the "Sandettié" lightship observations would be resumed.

Collaboration in work on the winter and spent herring fisheries would be carried out with Dr. Hodgson and M. Gilis. M. Ancellin would assist in the English plaice investigation by giving information on the maturity of plaice landed at Boulogne. Some La Rochelle plaice information and otoliths would be obtained by M. Letaconnoux. Investigations on the mackerel and pilchard spawning ground between Dungeness and Beachy Head would be made and English mackerel material found in this area would be received by Prof. le Gall.

Holland: Temperature and salinities would be collected from the Maas and Haaks lightships.

Work on the composition of the plaice stocks would be continued and it was expected that observations on the sole would be commenced. Measurements of this latter species would be exchanged between England and Holland, and if possible some backbones would be collected. Market measurements would be continued at the ports.

A new research vessel would be in operation during the year and would carry out a general investigation of trawling grounds near the Dutch coast. Comparative fishing experiments would be arranged using the new ship, Dutch cutters and co-operating with the vessels of other countries.

Poland: No work would be done in the Committee's area during the year.

Scotland: A general cruise will be made during the summer when it is expected that hydrographic and plankton observations may be made in co-ordination with those made by the research vessels of other members of the Committee. The work of the new motor herring drifter will be planned in conjunction with England.

Sweden: No work would be done in the Committee's area during the year.

IV. Recommendation.

It was decided to recommend to the Council that, in view of the importance of evaluating the different methods used, a Special Meeting should be held at the next Council Meeting on the comparative efficiency of fishing craft, their gear and modifications of gear. In the event of this meeting being agreed upon it was suggested that Dr. Borowik should be the convener.

Transition Area Committee.

Chairman: Dr. E. M. Poulsen.
The Committee met on October 22nd, 1947, at 9.30 a. m.

I. Proceedings.

1) Communications were delivered on the work carried out by the different countries. Information on the following points were given and discussed.

(a) Dr. Molander on the occurrence of the 0-group of plaice along the Swedish coast in 1947.
(b) Dr. Molander on the variation in the catches of haddock in years after the war.
(c) Dr. Jensen on the Danish investigations on the strength of the 0-group of plaice in Danish waters in 1947.
(d) Dr. Jensen on the strong increase in the yield of the plaice fishery in the Kattegat after the war caused by the closing of areas for fishing owing to war conditions.
(e) Dr. Alf Dannevig on the distribution of the younger fishes along and off the Skagerak coast.

2) Dr. E. M. Poulsen was re-elected Chairman for the ensuing year. The Committee agreed that Dr. Aage J. C. Jensen should act as Chairman during his absence.

II. Notes on the Agenda for the Current Council Meeting.

Ad point 3. The annual meeting should take place during the period October—December. If this is convenient it is supposed that the date of the financial year might be altered accordingly.

Ad point 4. The Council Meeting should be held every year.

Ad point 5. The Committee should be at liberty to deal with any problems of interest to fisheries in its area. A close co-ordination of research programmes is desirable.

Ad point 6. Papers should, if possible, be circulated before the meeting and in that case it should not be necessary to read them at the meeting.

Ad point 7. Honoraria should be maintained as before and the contributions of the various countries might be increased.

III. Programme of Work.

The programme adopted for the previous year should still be in force with the addition of the following points:

1) The causes of the annual variations in size of the stock and the distribution of the most important fishes should be studied. A close co-operation between the countries concerned should be advisable.

2) Investigations with the view of increasing the minimum size of plaice and of introducing other measures for the protection of this fish should be carried out.

3) It was suggested that the study of annual variations in the size and distribution of the more important food fishes common to all coasts in Skagerak be taken up in close co-operation with all countries interested.

IV. Recommendation.

The Committee adopted the recommendations made by the meeting of experts on October 18th 1947 (see Appendix).

Appendix.

On October 18th a meeting of experts was held at Charlottenlund Castle in order to consider and propose —from a biological point of view—measures for the protection of the stock of *Pandalus borealis*, *Nephrops norvegicus* and *Homarus vulgaris*. The meeting was attended by experts from Denmark, Norway and Sweden. Poland had been invited but could not send an expert.

Lectures on the latest results of investigations were heard and discussed.

Recommendations.

1) Prawn (*Pandalus borealis*). As a decrease in the stock had been observed in certain places the experts regarded immediate protection as necessary for the international waters in the Transition Area.

A. The minimum size of mesh for trawls used in prawn fishery shall be such that when the mesh is stretched diagonally lengthwise of the net a flat gauge 30 mm. broad and 2 mm. thick shall pass through it easily when the net is wet.

B. The opening of the cod-end of the trawl should not be at the extreme end but immediately in front and laced and not tied.

2) Lobster (*Homarus vulgaris*). On certain old fishing grounds a considerable decrease has been observed. It was agreed that in the area mentioned under point 1 both in territorial and extraterritorial waters the minimum size should be raised from 21 to 21.5 cm. and two years later to 22 cm.

3) Norway Lobster (*Nephrops norvegicus*). It was agreed that from a biological point-of-view the stock could be better utilized if an international minimum size of 15 cm. was introduced for the waters mentioned under point 2.

Baltic Area Committee.

Chairman: Dr. K. A. Andersson.

The Committee met at 9.30 a. m. on October 23rd, 1947.

I. Proceedings.

The following communications were given and discussed.

(a) Dr. W. Mankowski: Comparative studies on the distribution of eggs and larvae of herring, cod, and *Onos cimbrius* in the Gulf of Gdansk in 1938, 1946 and 1947.
(b) Professor T. H. Järvi: Herring investigations in Finland.
(c) Dr. A. R. Molander: Young plaice in the Baltic.
(d) Dr. Chr. Hessle: Marking experiments on the eel.
(e) Dr. H. Alander: Investigations on the Baltic herring, including location by echo sounding.
(f) Dr. Aage J. C. Jensen: Investigations on herring around Bornholm.
(g) Dr. M. Bogucki: Investigations on Baltic cod.
(h) Dr. H. Alander: Hydrographical investigations in the Baltic.

The problem concerning alteration of the Southern Baltic Convention now in force was discussed. On account of the present political circumstances this question was postponed.

The question concerning the introduction of an international minimum size for salmon in the Baltic was considered and for the same reason postponed.

As Dr. K. A. Andersson did not wish to continue as Chairman, Dr. Chr. Hessle was elected Chairman for the ensuing year.

II. Notes on the Agenda for the Current Council Meeting.

Ad point 3. The annual meeting should take place during the period October to December.

Taking into account the desirability of the budget for the financial year being adopted by the Council before the beginning of that year, the Committee propose that the financial year should be changed to coincide with the calendar year (January 1st—December 31st).

Ad point 4. The Council Meeting should be held every year.

Ad point 5. The Committee should be at liberty to deal with any problems related to fisheries in its area. A close co-ordination of research programmes is desirable.

Ad point 6. Papers should, if possible, be circulated before the meeting, in which case it should not be necessary to read them at the meeting.

Ad point 7. Honoraria should be maintained as before, while the contributions of the various countries might be increased.

III. Programme of Work.

The programme adopted for the previous year should remain in force with the addition of the following items:

1) Tagging experiments on eels should be carried out for the purpose of studying their migrations in greater detail.

2) The inflow and advance through the Baltic of salt water should be investigated by the scientists of the countries concerned in co-operation with each other.

3) There should be closer co-operation in the planning and carrying out of the programmes, especially in the present investigations on the cod.

Reports and Programmes of other Committees.

Hydrographical Committee.

Chairman: Professor MARTIN KNUDSEN.

The Committee met on October 20th at 2.30 p. m., 21st at 11.00 a. m., 22nd at 2.30 p. m. and 23rd at 4.00 p. m.

I. Proceedings.

The Chairman welcomed the members. As new members had been nominated Dr. RAMALHO (Portugal), Mr. THOMSEN (Denmark), and Mr. WENT (Éire), the last mentioned to replace Mr. FARRAN who had retired.

The Hydrographer reported on the work carried out in Service Hydrographique since the last meeting. Recommendation 1 was carried.

According to information procured by Dr. CARRUTHERS there existed some unpublished German hydrographical data from the waters worked by the Council. Recommendation 2 was carried.

Prof. MOSBY reported on the activity of the International Association of Physical Oceanography with regard to oceanographical observations from the Atlantic Weather Ships. The said Association had now appointed a Committee (Chairman Dr. R. H. FLEMING) to consider the whole matter.

A discussion took place with regard to the desirability of proposing a definite programme for the Weather Ships and with regard to the question of printing and working-up of the data. Recommendation 3 was carried.

The Plankton Committee sent over a proposal for a Recommendation (Rec. 4) which was carried by the Hydrographical Committee.

The members reported on planned hydrographic investigations at sea in the coming year. In connection herewith Dr. EGGVIN stressed the importance of a co-ordination of the work in the various countries. The desirability of developing the network of surface sampling routes, especially in the North Sea, was emphasized by Mr. LUMBY.

Prof. MOSBY gave a lecture on his apparatus for automatic registration of the sea-temperature along a vertical line, the "Thermo-sound".

From the Sub-Committee for Organization of Combined Hydrographical-Biological Investigations a report was laid before the Committee (see below). Recommendation 6 was carried.

Dr. CARRUTHERS on being asked by the Chairman if he had anything of interest to the Committee regarding Germany to communicate stated that he had brought with him to lay on the table certain relevant papers—to be examined by those interested.

The Chairman communicated that the Council would be invited to send representatives to the Meeting of the International Association of Physical Oceanography in Oslo next year. Recommendation 5 was carried.

The Chairman asked the members to consider the question of recommending a new Chairman as he felt that a younger person now ought to take over the chair.

Mr. HELGE THOMSEN was elected Chairman for the ensuing year.

Mr. LUMBY proposed a hearty vote of thanks to Prof. KNUDSEN for the services he had rendered as Chairman for the Committee during more than twenty years and for his contribution to the development of the hydrography all over the world. This was heartily applauded.

Mr. THOMSEN expressed the hope that the Committee also in the years to come would have the advantage of Prof. KNUDSEN's experienced assistance.

II. Notes on the Agenda for the Current Council Meeting.

The date for the Council Meeting was discussed. The majority of the members was in favour of October, while a minority would prefer to have the Meeting in May. As to the frequency of the Council Meetings the great majority was in favour of a meeting each year.

III. Recommendations.

1) It was recommended that the following papers should be printed in the publications of the Council:

J. P. JACOBSEN: Some Characteristic Features in the Variation of the Surface Temperature in the North Atlantic.

JENS SMED: On the Water Exchange between the Norwegian Sea and the North Sea.

2) It was recommended that unpublished German data of sea temperature and salinity from areas covered by the Bulletin Hydrographique should be incorporated in the Bulletin with exception of coastal data of purely local interest.

3) It was considered desirable that all countries operating Weather Ships should undertake oceanographical observations from them as soon as possible. Until a common programme had been agreed upon, the individual nations should work to the best programmes possible to themselves. The question of working to a common programme could best be left for decision by the relevant committee of the International Association of Oceanography ("Fleming Committee") at its meeting due to take place in Oslo in August 1948. At that meeting it was hoped that full consideration could be given to both the working-up and the publication of the data.

4) It was recommended that the members of the Hydrographic Committee also belonging to the "Fleming Committee" for oceanographic work on the Atlantic Wheather Ships should arrange

(a) that the Plankton Committee through its Chairman be informed on the hydrographical work to be done from the various ships;

(b) that observers from the Plankton Committee be invited to the meeting of the "Fleming Committee" in Oslo in August 1948[1]).

5) It was recommended that the Chairman of the Hydrographical Committee, Mr. HELGE THOMSEN, and the Hydrographer to the Council, Mr. JENS SMED, should represent the Council at the Meeting of the International Association of Oceanography in Oslo in August 1948[1]).

6) It was recommended that a Meeting of Messrs. EGGVIN, LUMBY, TAIT, THOMSEN, and ZEILON should take place during three days in the late autumn this year for preparing the publication of the hydrographical results of this year's investigations as carried out under the auspices of the Sub-Committee for Organization of Combined Hydrographical-Biological Investigations, and further, to plan new investigations in the same line.

[1]) Amended by the Consultative Committee (and passed by the Council) to the effect that the Chairmen of the Hydrographical and Plankton Committees should represent the Council at the Meeting of the International Association of Oceanography in Oslo in 1948.

Appendix.

Sub-Committee for Organization of Combined Hydrographical-Biological Investigations.

Chairman: Dr. H. BLEGVAD.

The Sub-Committee met on October 21st 1947 at 2.30 p. m. and on October 23rd at 11.30 a. m.

The Chairman opened the meeting and drew attention to the investigations carried out last spring in the northern North Sea under the auspices of the Sub-Committee.

Prof. FJELDSTAD gave a lecture on internal waves. Mr. ROLLEFSEN asked for information on water transport and on the renewal of water in fiords. Prof. FJELDSTAD and Dr. EGGVIN replied.

Prof. ZEILON gave a short summary of the investigations carried out according to plans worked out at the meeting in Gothenburg, February 1947 and gave some details with regard to the Swedish part of the investigations. Hydrographic conditions had been very abnormal because of the pronounced homogeneity of the water.

Dr. EGGVIN reported on the results of the Norwegian part of the programme. Work was carried out on cruises and on 9 fixed stations along the Norwegian coast. From the very extensive material it was seen that the temperature had been unusually low.

Mr. LUMBY gave some information on the results of an English cruise in the northern North Sea this year.

Mr. HERMANN reported on the Danish part of the work in the area. The results were in agreement with the above-mentioned investigations.

Dr. TAIT reported on the Scottish investigations which had given similar results. During spring and summer a banking-up of Atlantic water in the Faroe-Shetland channel appeared to have taken place, caused by an inflow from the north. The Atlantic water had probably been released in September.

It was decided that each country should work up its own data and the results should then be published in a common paper. Dr. EGGVIN agreed to act as editor of this paper.

Furthermore it was recommended that provision should be made for Messrs. EGGVIN, LUMBY, TAIT, THOMSEN, and ZEILON to meet for 3 days in the late autumn in order to discuss the results obtained this year and to plan investigations along the same lines for next year. Dr. TÅNING proposed that biological work should be carried out in connection with the hydrographical investigations. After some discussion it was resolved that a preliminary programme for future work should be drawn up at the above-named

meeting and be distributed to the members of the Plankton Committee. The convener of the meeting, Prof. ZEILON, should then be prepared to receive and consider the wishes of the various biologists.

Dr. BLEGVAD declared that owing to lack of time he wished to retire from the Chairmanship of the Sub-Committee and proposed Dr. EGGVIN as his successor.

Dr. EGGVIN was elected Chairman for the ensuing year.

Plankton Committee.

Acting Chairman: Dr. P. JESPERSEN.
The Committee met on October 23th, 1947, at 2.30 p. m.

I. Proceedings.

As Dr. RUSSELL was unable to attend this meeting Dr. JESPERSEN took the chair. Mr. WIBORG replaced Dr. RUUD as one of the Norwegian members of the Committee and Dr. W. MANKOWSKI being new member for Poland.

The Chairman drew the attention of the members to the work done in 1946 and the Administrative Report was accepted. It was announced that 10 Zooplankton Sheets were in the press and that 14 others were in preparation; scientists were wanted, however, to prepare further sheets.

In connexion with a letter received from Dr. BRANDES, respecting a paper on the plankton of the Bornholm Basin written by the late Dr. E. HENTSCHEL it was decided that the question of examining it with a view to publication should be deferred to next year.

Dr. S. M. MARSHALL gave a paper on "The Effect of Fertilization on the Plankton of Loch Craiglin, a small Sea-Loch".

Contributions to the Sub-Committee on the standardization of zooplankton collection were examined and Dr. S. M. MARSHALL and Mr. KR. FR. WIBORG gave papers on experiments with the plankton pumps and plankton sampler. An interesting discussion was held on both these subjects and it was decided that the Sub-Committee on plankton pumps and measuring nets should continue its activities.

Dr. BRAARUD gave an account of the situation in respect of biological collections from the weather ships and the following resolutions were carried for transmission to the Hydrographical Committee:

1) that the Plankton Committee through its Chairman be informed on the hydrographical work to be done from the various ships;

2) that observers from the Plankton Committee be invited to the meeting of the "Fleming Committee" in Oslo in July 1948.

Dr. F. S. RUSSELL was re-elected Chairman.

II. Notes on the Agenda for the Current Council Meeting.

The Committee arrived at the following decisions: Date of annual meeting: October; Frequency of meetings: annual; Functions of Area Committees: outside the scope of the Committee; Proceedings: agreed; Honoraria: if necessary increased contributions should be obtained from the member countries, only if this fails should there be a reduction in honoraria.

III. Recommendation.

The Committee decided to recommend to the Council that the publication of the Plankton Identification Sheets should be continued during the coming year.

Salmon and Trout Committee.

Chairman: Professor KNUT DAHL.
The Committee met on October 21st, 1947, at 9.30 a. m.

I. Proceedings.

Mr. SØMME was elected to act as secretary for the meeting.

M. VIBERT raised the question of co-operative work on the salmon of the Rhine Basin, and after a short discussion the Committee agreed that the countries concerned in the Rhine question should appoint a committee and draw up a plan for the work and then approach the International Council on the matter.

The representatives from the various countries reported on the research work carried out as part of the scheme for international co-operation. It appears that shortage of tags has caused difficulties in fulfilling the tagging program in Eire, France and Iceland. Lack of suitable staff has prevented tagging in Scotland. Clean salmon have been tagged in England, Norway and Sweden. In England 57 salmon and 9 sea trout were tagged. Eleven recaptures have been reported so far (October 1947) and two tags have been returned without the fish. In Norway 244 salmon were tagged at two coastal stations. So far (October 1947) 88 recaptures have been reported, one of them from Sweden, the rest from Norway.

In Iceland 401 salmon and 109 sea trout were marked by fin cuttings.

In Poland 5000 smolts will be tagged next year.

In Norway 326 smolts were tagged in the Sandvika River near Oslo in May 1947.

The results of all taggings within the Baltic area have been reported in a paper by Prof. T. H. JÄRVI: An abstract in English will be sent to the International Council.

Mr. OTTERSTRØM has prepared a paper on the identification of salmon and sea trout[1]).

Prof. KNUT DAHL was re-elected Chairman for the ensuing year, failing him Mr. S. SØMME.

II. Notes on the Agenda for the Current Council Meeting.

1) The Committee is of the opinion that the annual meetings of the Council should be held either as at present, if the financial year can be changed, or in mid-winter or the early spring if the present financial year is maintained. Meetings in May and in the summer months are very unfavourable for salmon and trout research work.

2) The Committee agreed upon annual meetings.

3) The functions of the Area Committees are outside the scope of the Committee.

4) The Committee agreed to the proposal in Notes to the Agenda.

5) On account of the amount of work carried out by the Chairman of the Committee, the Committee is of the opinion that the honorarium now paid is not excessive and certainly should not be reduced.

III. Recommendation.

It was recommended at the suggestion of Mr. WENT, that an account of the methods of catching anadromous fish in each participating country should be prepared for circulation to the members.

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[1]) To be printed in *Journ. du Conseil,* Vol. XV, No. 2.

Whaling Committee.

Chairman: Dr. N. A. Mackintosh.
The Committee met on October 23rd, 1947, 3.30 p. m.

I. Proceedings.

The Chairman referred to the International Whaling Conference which was held in Washington in 1946, and said that it had resulted not so much in the institution of new regulations as in the drawing up of a new Convention which would put the machinery of regulation on a better basis for the future. Mr. Dobson gave a short account of the conference, and the Committee noted with satisfaction that additional governments had become parties to the convention. They also noted that a Commission had been set up, with powers to amend the regulations from time to time.

The Chairman gave a short review of the progress of whaling in the Antarctic since the war. The catches in 1945—46 had been relatively poor, but the season of 1946—47 had been much more successful. It was expected that 17 factory ships would operate in the Antarctic in 1947—48, and it was likely that the overall limit of 16,000 blue whale units would be reached before the closing date. This led to a discussion on the overall limit in which Mr. Maurice, Dr. Hjort, Prof. Ruud, and others took part. The Committee agreed that, while the question of whether an adequate stock of whales for future exploitation was more or less important than the immediate provision of increased fat supplies from this source was outside their terms of reference, nevertheless from the biological point of view any increase at present in the limit of 16,000 units might be expected to result in further depletion of the stock, and that the figure of 16,000 may in fact be found to be too high. It was also pointed out that if the figure were varied it would be much more difficult to assess the condition of the stock from time to time.

The Committee then discussed some of the biological problems which in due course are likely to be considered by the Commission. Among these are the question of the protection of humpback whales in the Antarctic, and the possible need to define certain areas as sanctuaries. The Chairman suggested that although definite recommendations could hardly be made at the present time, it might be helpful to draw attention to some of the points which would need to be taken into consideration. In the Final Act signed at Washington it is recommended that the ban on the taking of humpbacks by factory ships in the Antarctic should be removed, or that a limit should be set to the numbers of the species to be taken in the Antarctic and the tropics. The Committee noted that unconditional removal of the ban may be expected to result in serious depletion of the humpback stock. If limits were set to the catches of this species it would be necessary to give separate consideration to the major communities of humpbacks in the southern hemisphere. If sanctuaries were instituted there would again be various possibilities to consider. For instance a permanent sanctuary might be maintained in the Pacific sector, or areas might be closed in rotation. Account should be taken of the condition of the stock of each species as far as it is known in the different areas.

The Committee received some information on the progress of research on whales. Mr. Lienesch said that biologists were working in the factory ship "Willem Barendsz". The Chairman said that the Discovery Committee continued to collect data from whaling factories as before, and that counts of the corpora lutea of the ovaries indicated a relatively good recruitment of young blue whales to the stock. Prof. Ruud described further results of determining the ages of whales by examining the baleen plates. This work also suggests that young whales are well represented in the present stock. Apart from this it indicates that the age at which whales become adult, although variable, is generally greater than was formerly supposed.

Dr. Mackintosh was re-elected Chairman for the next year.

II. Recommendation.

The Committee are of the opinion that any present increase in the Antarctic pelagic catch limit of 16,000 blue whale units would involve serious risk to the long-term preservation of the stock of whales.

Statistical Committee.

Acting Chairman: Dr. Nils Rosén.
The Committee met at 2.30 p. m. on October 22nd, 1947.

I. Proceedings.

1) The Bulletin Statistique for 1939 was laid before the Committee, Part I (Introduction) only in manuscript and Part II (Statistics) in proof-print.

2) The possibility of getting more material for some tables in the coming Bulletin Statistique was discussed.

3) The conversion into equivalent weight of shellfish was discussed.

4) The Committee decided after discussion that the statistics for the years 1940—1944 should be printed in one volume.

5) The Committee decided to use the year 1938 as a comparison year in the following Bulletins.

6) Mr. Wimpenny thought it desirable, if possible, to get statistics concerning the intensity and location of the stocks of fishes in small areas of the southern North Sea. The Committee decided to try to get such information.

7) It was decided on discussion that the Statistical Committee should produce a preliminary annual report on the landings and value of fish on the lines of Part II Table I, 1 ("Total Value and Product of the Sea-Fisheries") in the previous Bulletins Statistiques, but including the five most important species, and that this statement should be published as soon as possible after the end of each calendar year. This information to be supplied by each country when requested by the Statistical Service of the Council.

8) The Committee proposed Sir D'Arcy Thompson be re-elected Chairman for the ensuing year and failing him Dr. Nils Rosén.

II. Notes on the Agenda for the Current Council Meeting.

The opinion of the majority was that the meeting of the Council ought to be held every year in May, and that if the work now carried out by the various Chairmen had to be undertaken by the staff of the headquarter the saving of the honoraria might be less than the increased costs. The Committee recommended that the present system of payment of honoraria should be continued close to or at the present scale.

III. Recommendation.

After discussion it was agreed to recommend to the Consultative Committee that a special Sub-Committee of the Statistical Committee be called to meet early in 1948 for the following purpose:

To consider the present method of collecting and compiling of statistics and the necessity of modifying and expanding such statistics for the purpose of current biological investigations.

The Sub-Committee should consist of representatives of the Council, the Fisheries Statistical Services of the principal countries concerned with fisheries and the Fisheries Division of F.A.O. The Acting Chairman of the Statistical Committee (Dr. Rosén), Dr. Borowik and Mr. Graham are recommended for inclusion in this Sub-Committee.

VERSION FRANÇAISE

Réunions Scientifiques Spéciales.

A. L'Effet de la Guerre sur les Stocks de Poissons Commerciaux.

Président: Dr. R. S. Clark.
24 Octobre 1947 à 9 h 30.

A la demande du "Convener", Dr. R. S. Clark, les rapports ont circulé avant la réunion. Le Président invite les auteurs à exposer aux auditeurs les principaux points de leurs travaux.

Au cours de la séance du matin, les auteurs ou leurs représentants traitent leur sujet, l'opportunité d'y revenir leur étant donnée à la fin de la matinée. L'après-midi, le rapporteur, M. Michael Graham, donne un résumé critique de tous les travaux présentés et d'autres travaux se rapportant au même sujet et qui ont déjà parus.

Les travaux suivants ont été présentés:

G. Rollefsen: Le stock arcto-norvégien de morues.
Arvid R. Molander: La pêche suédoise de plies cynoglosses dans le Skagerak et la Mer du Nord.
Arvid R. Molander: La pêche suédoise de lingues avant et depuis la guerre.
Z. Mulicki: Variations dans la composition du stock de flets dans le Golfe de Gdansk pendant la guerre.
Aage J. C. Jensen: Le stock de plies en Mer du Nord et dans le Secteur de Transition pendant la guerre
R. Letaconnoux: Effets de la guerre sur la constitution des stocks de poissons.
B. B. Parrish: Le stock d'églefins dans la Mer du Nord pendant la deuxième moitié de 1945.
A. R. Margetts et S. J. Holt: Les effets de la guerre 1939—1945 sur les pêcheries anglaises au chalut en Mer du Nord.

Les travaux présentés paraîtront dans un volume spécial de la série Rapp. et Proc.-Verb.

B. L'Elevage du Poisson.

Président: Dr. R. S. Clark.
26 Octobre 1947 à 10 heures.

L'organisateur, M. Gunnar Rollefsen, avait suggéré que la discussion porta sur les quatre points exprimés ci-dessous et avait exprimé le souhait, d'après les renseignements reçus, que la réunion conduisit à recommander certaines méthodes et principes pour les travaux ultérieurs.

1) Les résultats de l'immersion de frai nouvellement éclos peuvent-ils être démontrés?

2) Les résultats d'un apport d'alevins peuvent-ils être prouvés?

3) Jusqu'à quel point l'hérédité et le milieu affectent-ils le frai?

4) Des observations récentes sur le nombre des chromosomes de poissons lors d'une production plus grande d'œufs ont-elles été effectuées?

Une cinquième question est soulevée pendant la réunion:

5) Connaît-on des organismes alimentaires appropriés autres que *Artemia salina*?

Les contributions des membres suivants sont discutées: M. Gunnar Rollefsen, Dr. Alf Dannevig, Dr. Anton Fr. Bruun, Dr. A. Vedel Tåning et Dr. O. Nybelin.

Les travaux seront publiés dans la série Rapp. et Proc.-Verb. en même temps que les travaux mentionnés ci-dessus.

Rapport et Recommandations du Comité Consultatif.

Président: Dr. R. S. Clark.

Première séance, lundi 20 Octobre à 15 h 00; deuxième séance, jeudi 23 Octobre à 17 h 00; troisième séance, samedi 25 Octobre à 10 h.

Présents: Tous les membres à l'exception de Sir d'Arcy Thompson et M. F. S. Russell, remplacés respectivement par le Dr. Rosén et le Dr. Jespersen.

I. Compte-rendu.

1) Le Président, en ouvrant la séance souhaite la bienvenue aux membres et déplore l'absence de Sir d'Arcy Thompson, malade, et celle de M. F. S. Russell.

2) Programme des réunions. L'heure de la réunion du Comité du Sud de la Mer du Nord, le mardi 21, est avancée à 15 heures au lieu de 16 h.

La proposition faite d'un exposé sur le saumon de Norvège est renvoyée devant le Comité du Saumon et de la Truite.

3) Rapport sur l'avancement des travaux. Le rapport suivant comprenant la période Août 1946 à Octobre 1947 est discuté de point en point.

I. Protection des Poissons.

(a) Une réunion des experts pour examiner les mesures à prendre pour la protection du stock de *Pandalus borealis*, *Nephrops norvegicus* et *Homarus vulgaris* aura lieu le 18 octobre. Le Danemark, la Norvège, la Pologne et la Suède ont été invités à y envoyer des délégués.

(b) Fermeture de la Baie de Faxa. Le Sous-Comité ayant terminé ses travaux a été dissous lors de la dernière réunion du Comité du Secteur Nord-Ouest. Le rapport du Sous-Comité transmis au Comité Consultatif au mois d'Août dernier est actuellement à l'impression. Voir plus loin: Publications.

II. Réunions Scientifiques Spéciales.

Il avait été décidé à Stockholm de faire deux réunions:

(a) Une réunion pour discuter des "Effets de la Guerre sur les Stocks de Poissons Commerciaux destinés à l'Alimentation", qui se tiendra le vendredi 24. L'organisateur: Dr. Clark a désiré que cette réunion soit entièrement consacrée aux discussions. En conséquence, les épreuves des différents rapports devant être présentées à cette réunion ont été mises en circulation parmi les délégués et experts devant y assister. Les rapports ont été reçues de:

Angleterre: Margetts et Holt sur:
(1) Les pêcheries au chalut en Mer du Nord;
(2) La pêcherie anglaise de Plies;
Danemark: Jensen — sur les Poissons Plats;
Ecosse: Parrish — sur le Haddock;
France: Letaconnoux — sur divers poissons;
Norvège: Rollefsen — sur le stock Arcto-Norvégien de Morues;
Pologne: Mulicki — sur le Flet;
Suède: Molander — sur la Plie cynoglosse et la Lingue.

b) La réunion pour discuter de l'"Elevage du Poisson" se tiendra le dimanche 28. L'organisateur: M. Rollefsen a adressé un programme et un ordre du jour mis en circulation parmi les délégués et experts.

III. Travaux spéciaux.

Cartes de Distribution du Hareng du Dr. Hodgson. Le Dr. Hodgson informe qu'il a reçu toutes les informations de chaque pays à l'exception de la Suède et de l'Irlande; il ajoute qu'il a consulté le Département Hydrographique de l'Amirauté au sujet de ces cartes et que l'on pourra obtenir une très bonne carte répondant au but visé. Ce Département sera également en mesure d'entreprendre l'impression de l'Atlas si on le lui demande.

IV. Sous-Comités.

(a) Recherches hydrographiques et biologiques combinées. Une réunion s'est tenue à Göteborg le 27 Février, à laquelle ont assisté: Messieurs Eggvin, Hans Pettersson, Helge Thomsen, et N. Zeilon. Un programme préliminaire des observations à faire a été adopté. Le sommaire des résultats suédois vient d'être reçu au secrétariat.

(b) Normalisation des méthodes d'étude du plancton. Un sous-comité a été constitué, comprenant MMrs. F. S. Russell, Président, Wimpenny, J. H. Fraser, H. Höglund, Fr. Wiborg et P. Jespersen. Le Président a demandé aux membres de lui faire part des résultats de leurs expériences avec les pompes; les réponses, reçues de tous les membres, ont été mises en circulation.

V. Publications.

Depuis l'an dernier, les difficultés d'impression ont malheureusement encore augmenté; une grève des imprimeurs, de Mars au milieu de Juillet, a interrompu toutes les publications et il fallut quelque temps pour que le travail reprit à plein rendement.

(a) les *Rapports et Procès-Verbaux.* Volume Nos. 117 (Proc.-Verb. de Stockholm et Rapport Administratif) et 118 (Réunions Scientifiques 1946) ont été distribués en Septembre; N° 119 (Rapport sur le Saumon du Professeur Järvi) et 120 (Rapport sur la Baie de Faxa), sont à l'impression: partiellement en premières épreuves, partiellement en secondes; l'épreuve du Rapport Administra-

tif pour 1946 sera prête pour être distribuée à l'Assemblée Plénière.

(b) *Annales Biologiques.* Le volume II a été distribué en Septembre. Les épreuves du Volume III seront prêtes pour être distribuées à l'Assemblée Plénière.

(c) *Journal du Conseil* XV, 1, est mis en distribution, le rédacteur a fait parvenir le matériel pour le N° 2 qui a été adressé à l'imprimeur.

(d) *Bulletin Hydrographique.* Une partie du matériel pour le N° de 1940—1946 a été reçue et préparée sous forme manuscrite mais il manque encore beaucoup de documents.

(e) *Bulletin Statistique.* Les épreuves du N° de 1939 sont attendues pour pouvoir être distribuées aux membres du Comité Statistique en Octobre; la compilation des résultats de 1940—1945 est bien avancée.

(f) *Fiches Planctoniques.* Une première épreuve des feuilles Nos 8—10, Pteropoda Thecosomata by J. J. Tesch, Thaliacea I et II par J. H. Fraser est parvenue de l'Imprimerie.

Le secrétariat a fait tous ses efforts pour assurer une publication rapide des papiers du Conseil. Grâce à l'aimable intervention du Dr. K. A. Andersson, le Rapport pour la Baie de Faxa a été accepté pour impression par une maison suédoise et le Rapport des Réunions Scientifiques a été reproduit par phototypie.

Il est approuvé de laisser au Dr. Hodgson, au Secrétaire Général et au Président le soin de l'impression et de fixer les dimensions des Cartes de Distribution du Hareng (voir point III).

4) Notes sur l'Ordre de Jour de la présente Assemblée du Conseil. Les divers points de cet ordre du jour sont discutés provisoirement et officieusement. Il est décidé de demander aux Comités d'examiner tous les points et de transmettre leur avis par l'intermédiaire de leur Président lors de la réunion spéciale du Comité Consultatif du jeudi 23 Octobre à 16 h 30.

A la seconde séance, l'analyse des avis des différents Comités reçus est considérée et la recommandation indiquée au paragraphe II, 1, est faite.

5) A la troisième séance, les rapports des Comités qui avaient été distribués sont discutés et les recommandations II, 2—6, sont adoptées.

6) Le Secrétaire Général s'adresse à tous les Présidents des Comités pour que les règles de publication soient strictement appliquées afin qu'aucun travail supplémentaire n'échoie au secrétariat ainsi qu'il en est résulté par suite d'un relâchement de cette observation.

7) Le Dr. Clark a été réélu Président pour l'année suivante.

II. Recommandations.

1. Note sur l'Ordre du Jour de l'Assemblée plénière.

Comme résultat d'une discussion sur les rapports de Comités les recommandations suivantes sont soumises au Bureau.

(a) Date de la réunion annuelle: Octobre (1ère quinzaine).

(b) Fréquence des Réunions du Conseil: annuelle.

(c) Fonctions: pas de changement de forme, c.-à-d., aucune restriction des sujets d'étude. Une coordination étroite est recommandée et l'on désire que des sujets de technique générale soient soumis à l'attention des Comités pour que des réunions scientifiques spéciales puissent avoir lieu s'il est nécessaire.

(d) Procédure: Que tout effort soit fait pour que la distribution des documents bien avant la réunion du Conseil permette d'éviter d'en accaparer le temps par la lecture de ces exposés.

(2) Honoraires: Pas de restrictions.

2. Programmes.

Les grandes lignes de travail général et les programmes de bateaux des pays participants seront discutés chaque année; d'abord par les Comités et ensuite par une Réunion spéciale du Comité Consultatif en vue d'une coordination plus efficace des programmes.

3. Réunions Scientifiques Spéciales.

a) Il est recommandé qu'une réunion scientifique spéciale soit tenue au prochain conseil de Copenhague sur: "Les changements climatiques dans l'Arctique en relation avec les plantes et les animaux" et que le Dr. Ahlmann soit invité à la réunion comme hôte du Conseil.

b) Le Comité recommande aussi qu'une réunion scientifique spéciale, devant se tenir à la prochaine réunion du Conseil, traite du rendement comparé des bateaux, des engins et des modifications des engins et que le Dr. Borowik soit l'organisateur de cette réunion.

4. Réunions des Experts.

(a) A la suite d'une demande du Comité Hydrographique et du Comité du Plancton, il est décidé de recommander que les Présidents de ces deux Comités représentent le Conseil à la réunion de l'Association Internationale d'Océanographie d'Oslo en Août 1948.

(b) Le principe d'une réunion concernant les méthodes d'études de la sardine et autres clupéidés (à l'exception du hareng) ayant été adopté, le Comité recommande que des représentants du Portugal, de l'Espagne, de la France, l'Angleterre, la Norvège et la Suède y soient invités.

(c) Il est recommandé qu'un Sous-Comité du Comité Statistique, constitué par des représentants du Conseil, du Service statistique des Pêches des principaux pays intéressés par la pêche, et des représentants de la Division des Pêcheries de F.A.O. se réunisse à Copenhague au début de 1948. Il examinera les méthodes actuelles pour établir les statistiques et la nécessité d'adopter ces statistiques à des fins biologiques.

Le Président en exercice du Comité de Statistique (Dr. Rosén), Dr. Borowik et M. Graham sont recommandés comme membres de ce Sous-Comité.

(d) Il est aussi recommandé qu'une réunion du

Sous-Comité pour la Question des Féroës soit tenue à Copenhague deux jours avant la prochaine réunion du Conseil.

5. Action du Conseil.

(a) En accord avec les avis du Comité du Secteur Nord-Est, le Comité Consultatif demande que le Conseil se mette en relation avec les Autorités Russes, par l'intermédiaire du Ministère des Affaires Etrangères Danois, pour appeler leur attention: (1) sur la collection des marques de poissons russes qui sont en possession du Governement Norvégien; (2) sur une carte marine préparée par M. Rollefsen indiquant les lieux où les morues marquées par les savants russes ont été repêchées par les pêcheurs norvégiens; (3) le désir d'échanges d'informations sur les changements dans les stocks de harengs du nord.

(b) le Comité Consultatif pense que les résultats des travaux du Sous-Comité du Secteur de Transition sur Pandalus, Homarus et Nephrops sont de réelle importance et recommande que le Conseil demande au Ministère des Affaires Etrangères Danois d'attirer l'attention des différents pays sur ces résultats.

(c) Le Comité recommande que le Secrétaire Général demande aux membres des différents pays de communiquer leur information de statistiques au Conseil avec la plus grande diligence.

6. Publications.

Il est décidé de recommander que les deux rapports soumis par le Comité Hydrographique soient publiés par le Conseil.

Le Comité recommande aussi que la publication des feuilles d'identification du plancton soit commencée.

Rapports et Programmes des Comités des Secteurs.

Comité du Secteur Nord-Est.

Président: Mr. G. Rollefsen.
Le Comité s'est réuni le 21 Octobre 1947 à 9 h 30.

I. Compte-rendu.

1) Le Rapport administratif pour 1946 est adopté.
2) La liste revisée des membres est approuvée.
3) M. G. Rollefsen, M. Árni Friðriksson et M. Paul M. Hansen présentent des rapports sur les stocks de morues dans le secteur Nord-Est et les eaux adjacentes. Ces rapports et la discussion qui suit apportent l'évidence qu'une même classe de recrutement peut dominer dans le stock de morues Islande—Groenland, tandis que dans le stock arcto-norvégien, d'autres classes annuelles peuvent y dominer au cours des mêmes années.

M. F. Devold présente un rapport sur la température de la mer et les conditions de pêche dans le secteur Spitzberg—Ile aux Ours, montrant que les eaux couvrant les bancs étaient beaucoup plus froides au cours de ces deux dernières années qu'elles l'étaient l'année précédant la guerre.

M. G. Dannevig donne un bref compte-rendu sur les récentes expériences de marquage de la morue "Skrei" en Norvège. Les poissons libérés aux Lofoten montrent une tendance nette à une migration vers la partie est de la Mer de Barents.

Une discussion sur les méthodes de marquage et les types de marques met en évidence, entre autres choses, l'importance de la couleur et de la visibilité des marques.

4) M. Rollefsen est réélu Président pour l'année suivante.

II. Discussion de la Note présentée à l'Assemblée Générale.

1) Date de la réunion annuelle. Les membres du Comité exposent ainsi leurs opinions:
Danemark: Octobre—Février.
Angleterre: Mai.
Islande: Octobre préférable, mais accepterait Mai.
Norvège: Octobre.
Ecosse: Mai.
Suède: Mars—Avril, mais accepterait Octobre.

2) Fréquence des réunions.
Danemark: Préférerait chaque année, mais si tous les deux ans, on désirerait une réunion scientifique spéciale.
Angleterre: Tous les deux ans de préférence avec des réunions spéciales chaque année pour l'échange d'informations entre les jeunes scientifiques.
Finlande: Chaque année.
France: Chaque année, en appuyant l'opinion anglaise.
Islande: Chaque année.
Norvège: Chaque année.
Ecosse: Chaque année.
Suède: Chaque année.

3) Fonctions des Comités de Secteurs. Une discussion s'élève dans laquelle il apparaît que toute restriction sur les sujets étudiés dans les Comités de Secteurs sera complètement rejetée, mais qu'il est désirable d'en venir à une coordination plus étroite des programmes de recherches. Une difficulté, qui ne fut pas résolue, s'est présentée en signalant à l'attention de tous les membres du Comité les questions de techniques générales; mais il fut envisagé que les questions importantes d'un intérêt technique général pourraient être généralement traitées dans des réunions scientifiques spéciales.

4) Programme des réunions du Conseil. D'une façon générale, il est adopté de mettre, si possible, les rapports en circulation avant les réunions; mais il est reconnu que les rapports importants, qui ne peuvent être imprimés pour être mis en circulation, resteront lus.

5) Honoraires. Le Comité examine si les difficultés financières du Conseil prévues ne pourraient être évitées par une réduction des honoraires. L'impression générale est que ces honoraires sont justifiés et utiles, mais pourraient être sacrifiés si les contributions nationales ne peuvent être augmentées ou si une autre mesure effective ne peut être trouvée.

III. Programme des Travaux.

Il est adopté de fixer le programme des travaux entre les membres du Comité.

IV. Recommandation.

Il est recommandé que le Conseil prenne contact avec les Autorités Russes par l'intermédiaire du Ministère des Affaires Etrangères Danois pour attirer leur attention: 1) sur la collection des "marques" russes de poissons en possession du Gouvernement Norvégien; 2) sur une carte préparée par M. Rollefsen montrant les endroits de captures des morues marquées par les services scientifiques russes et repêchées par les pêcheurs norvégiens, carte qui sera fournie ultérieurement par M. Rollefsen et jointe à la correspondance officielle.

Il est recommandé au Conseil de demander au Ministère des Affaires Etrangères du Danemark d'insister sur l'intérêt commun de l'U.R.S.S. et des autres Nations pour l'avancement de nos connaissances sur les stocks de poissons dans les régions arctiques et de demander que les Autorités Russes prennent les dispositions voulues pour renvoyer les marques de poisson à leur pays d'origine et recevoir celles des autres pays.

Comité du Secteur Nord-Ouest.

Président: Dr. Å. Vedel Tåning.
Vice-Président: M. Árni Friðriksson.
Le Comité s'est réuni le 22 Octobre 1947 à 9 h 30.

I. Compte-rendu.

1) Le Président ouvre la séance et exprime l'espoir qu'il soit fourni, pour l'année prochaine, surtout pour les *Annales Biologiques*, beaucoup plus de données et de contributions que l'année passée. Le Rapport administratif est adopté. Le Président mentionne alors trois recommandations passées par le Comité au dernier Congrès de Stockholm en 1946, concernant le flétan, la question de la Baie de Faxa et la morue du Groenland.

M. Devold fait un exposé sur le flétan et recommande que le marquage des jeunes flétans, la collation des statistiques, des otolithes et l'examen des caractères raciaux soient effectués. Le Président distribue une partie de la seconde épreuve du Rapport de la Baie de Faxa qui doit être imprimé avant la fin de l'année et informe l'assemblée que la publication de M. Paul M. Hansen sur la morue du Groenland paraîtra cet hiver.

2) Communications.

a) M. P. M. Hansen fait un exposé sur le stock des morues du Groenland, ses fluctuations et le taux de croissance pendant ces dernières années. Le taux de croissance a été en diminuant, surtout dans le nord du Groenland. Le poutassou (*Gadus poutassou*) et la limande-sole ont été signalés dans les eaux du Groenland durant ces dernières années, et les sebastes sont venus frayer dans les fjords du sud du Groenland.

b) M. Á. Friðriksson donne des indications sur le hareng de la côte du nord de l'Islande pendant ces trois années qui ont été de très mauvaises années de pêche et il en expose les raisons.

c) M. Friðriksson lit une note ayant trait aux fonds de pêche et à la biologie des sebastes dans les eaux autour de l'Islande, note basée sur l'expérience acquise pendant les années 1937—1938.

d) Le Président montre l'existence de larves de sebastes dans le nord-ouest de l'Atlantique et fait un exposé sur l'extension énorme des frayères de ce poisson dans le secteur étendu où il à travaillé sur le "Dana" l'été dernier.

3) Le Président, Dr. Å. V. Tåning et le Vice-Président, M. Á. Friðriksson sont réélus à l'unanimité pour l'année prochaine.

II. Discussion de la Note présentée à l'Assemblée Générale.

Les rapports sur la fréquence des réunions, dates, salaires etc., sont établis et soumis au Comité Consultatif.

1) Préférence pour Octobre.
2) La majorité pour les réunions annuelles.
3) Liberté d'action.
4) Les rapports devront être mis en circulation suffisamment de temps avant les réunions.
5) Contributions plus élevées.

III. Programme de Travail.

Le travail se poursuivra suivant le même programme qu'au cours des années précédentes, et une attention spéciale sera portée sur les stocks des cinq poissons comestibles les plus importants: morue, haddock, plie, flétan et hareng. Il est convenu que le travail de recherche sur le flétan sera effectué suivant le plan établi par Devold, sur l'ensemble de l'aire de distribution géographique de cette espèce dans l'Atlantique Nord. Le travail de recherches comprendrait des études sur les races, des expériences de marquage (surtout de jeunes flétans), des échantillonnages d'otolithes pour la détermination de l'âge, des statistiques

générales sur les pêches comprenant les lieux et les catégories par taille, et la délimination des frayères et de l'époque de fraie.

Devant l'incertitude, quant au nombre de bateaux disponibles l'an prochain pour le travail de recherches à la mer, il est décidé que le Président demandera avant la fin de Janvier aux différents pays des détails sur les programmes de croisière en 1948. Il est convenu que tous les navires travaillant dans le secteur utiliseront toutes les occasions pour recueillir du matériel en rapport avec les variations hydrographiques, y comprenant des observations générales de biologie, afin d'augmenter la collection des documents de toutes sortes concernant cette question.

Appuyant sur le fait qu'il est d'un intérêt actuel de premier plan pour la pêche dans le secteur, que l'influence des variations climatiques actuelles sur la distribution, les migrations, les conditions de reproduction et la densité des animaux marins, soit étudiée, il est recommandé que toute occasion soit utilisée, aussi bien par les navires de recherches que par les autres bateaux, pour effectuer un travail biologique et écologique, spécialement dans les eaux au nord des Féroës, au nord et à l'est de l'Islande, dans le détroit du Danemark et dans le détroit de Davis. En rapport avec cette question très importante le Comité adopte la recommandation ci-dessous (V, 1).

IV. La Question des Féroës.

Le Sous-Comité s'est réuni le 22 Octobre à 3 heures. Le Président fait un exposé général sur le travail effectué jusqu'à présent, surtout pendant ces dernières années. Il est décidé que M. Graham préparera pendant l'hiver un rapport sur les populations de poissons dans ce sous-secteur, en s'appuyant sur les statistiques disponibles. Le Président promet de donner avant la prochaine réunion du Comité des indications sur la concentration des bateaux de pêche au nord et à l'ouest des îles. En outre, le Président est chargé de préparer un rapport sur la question qui sera soumis aux membres du Comité (Voir Rec. V, 2).

V. Recommandations.

Il est recommandé que:

1) Le problème des variations de climat dans l'Arctique étant un des deux plus pressants problèmes des secteurs du Conseil, la collation de toute information vraisemblablement pertinente commencera immédiatement, afin de ne perdre aucune observation valable. En vue d'effectuer cette collation il est proposé que les Présidents des Comités des Secteurs Nord-Est et Nord-Ouest soient chargés de rassembler et d'éditer ces documents pour l'année prochaine, de recevoir les informations de chaque secteur, de les condenser en "extraits" pour une réunion scientifique spéciale qui se tiendra lors de la prochaine Assemblée du Conseil. Il est aussi proposé que le Prof. Ahlmann soit invité à faire un exposé devant cette réunion scientifique spéciale; le sujet de la réunion étant "Variations climatiques dans l'Arctique et leurs relations avec les Plantes et les Animaux".

Que le Président adresse, par l'intermédiaire du Bureau aux services compétents, les demandes d'informations relevant de ce sujet, en mentionnant que de courts extraits d'information sur les plantes et les animaux terrestres seraient également intéressants.

2) Que le Sous-Comité pour la question des Féroës se réunisse deux jours avant la prochaine réunion du Conseil pour préparer le rapport final qui doit être soumis au Conseil.

Comité du Plateau Continental Atlantique.

Président: M. J. le Gall.

Le Comité s'est réuni le Mardi 21 Octobre 1947 à 14 h 30 et le Mercredi 22 Octobre à 9 h 30.

I. Compte-rendu.

1) Le Président en ouvrant la séance souhaite la bienvenue aux Délégués et Experts et remercie les membres du Comité pour les contributions qu'ils ont apportées à ses travaux pendant l'année 1946—1947.

2) Le Rapport administratif est adopté.

3) Les communications suivantes sont exposées et discutées.

A. Hydrologie.

(a) M. Lacombe: La propagation du son dans la mer et le repérage acoustique.

(b) M. Bernard: Stratification des eaux en Méditerranée.

(c) M. J. Furnestin: Observations sur la température de l'eau de mer dans la zone du Maroc[1]).

B. Biologie.

Clupéidés.

(d) M. J. Furnestin: Observations sur la biologie de la sardine marocaine (*Sardinia pilchardus* Walbaum).

Scombrides.

(e) M. J. le Gall: Note sur la croissance du maquereau (*Scomber scombrus* L.).

Brefs exposés suivis de discussions sur la biologie et le comportement des diverses espèces de

[1]) A paraître dans les Ann. Biol. pour 1947 (Vol. IV).

thunidés de l'Atlantique. (MM. J. Furnestin, J. le Gall, F. de P. Navarro, A. Ramalho, P. Desbrosses).

Gadidés.

(f) M. J. Letaconnoux: Mensurations et observations sur l'influence d'une pêche intensive sur la constitution du stock de merlus (*Merluccius merluccius* L.).

(g) M. J. Letaconnoux: Résultats préliminaires de quelques observations sur la biologie de la morue (*Gadus morrhua* L.) de la Mer Celtique.

(h) M. J. le Gall: Observations hydrologiques et biologiques sur les lieux de pêche de la morue à Terre Neuve.

Pleuronectides.

(i) MM. J. le Gall et Degand: Note préliminaire sur le flétan (*Hippoglossus vulgaris* Flemming) du Plateau Continental Celte.

C. Bibliographie.

Les travaux divers relatant les résultats des recherches d'hydrobiologie, de biologie et de physiologie faites dans les limites du Secteur du Plateau Continental Atlantique continueront à être signalés sous cette rubrique dans le Rapport administratif.

D. Conférences.

(a) Professeur M. Fontaine: La fonction thyroïdienne des poissons. Le Comité exprime le desir que cette conférence soit publiée dans le *Journal du Conseil*.

(b) MM. Renou et Tchernia: Exposé des recherches faites par la Marine Nationale Française sur le repérage des bancs de poissons par ASDIC.

4) M. Jean le Gall est réélu Président du Comité.

II. Discussion de la Note présentée à l'Assemblée Générale.

1) Date des réunions annuelles. L'Espagne, la France, le Portugal préféreraient le mois de Mai; l'Angleterre: Octobre, sans objection majeure pour Mai; le Danemark maintient sa préférence pour une réunion en hiver.

2) Fréquence des réunions du Conseil. Le Comité retient la suggestion proposée par le Dr. Navarro (Espagne) soutenue par la France et le Portugal: Une réunion plénière du Conseil International tous les deux ans. — Une réunion annuelle des Comités dans un pays choisi par eux; les dépenses étant à la charge des Etats membres de ces Comités.

3) Fonctions et travaux des Comités. Le Comité prend bonne note des suggestions faites dans la "Note" et agira en conséquence.

4) Honoraires. Le Président propose, étant données les difficultés budgétaires du Conseil, d'abandonner les honoraires, ou de considérer une réduction de ces honoraires, ainsi qu'il a été suggéré dans d'autres Comités.

Après avoir discuté sur ce sujet le Comité adopte l'idée suggérée par le Dr. Ramalho:

— augmentation de la contribution de chaque Etat suivant sa participation plus ou moins importante aux Comités du Conseil;

— la réduction possible du nombre de Comités géographiques;

— l'adhésion des pays méditerranéens au Conseil International (suggestion Dr. Navarro).

III. Programme des Travaux pour 1947.

A. L'Espagne, la France et le Portugal ont établi un programme de travaux en collaboration étroite pour l'étude de l'hydrologie générale du Plateau Continental Atlantique, de la Mer Celtique au Détroit Canarien, pour l'étude de la biologie de la sardine, du maquereau et des diverses espèces de thunidés de la Mer Celtique, du Golfe de Gascogne, de la côte Ibérienne, du Maroc et de la Mauritanie et enfin du Détroit de Gibraltar et la Méditerranée occidentale.

B. Conférence de Biarritz. Le Président confirme l'invitation de la ville de Biarritz qui accueillera les experts du Conseil chargés de l'étude de la biologie de la sardine et autres clupéidés (hareng excepté).

Les espèces étudiées lors de cette réunion seront la sardine (*Sardinia pilchardus*), la sardinelle (*Sardinella aurita*), le sprat (*Clupea sprattus*), l'anchois (*Engraulis encrasicholus*) et le genre Alosa.

Le programme de cette conférence est examiné et complété.

IV. Recommandations.

Le Comité du Plateau Continental Atlantique recommande:

1) que les travaux du Comité soient étendus à la zone du Détroit de Gibraltar et en Méditerranée occidentale (mer d'Alboran);

2) que la Conférence des Experts de la sardine et autres clupéidés (hareng excepté) qui devait se tenir à Biarritz en Octobre 1947 soit reportée à la fin d'Avril 1948.

Comité du Nord de la Mer du Nord.

Président: Dr. R. S. Clark.
Le Comité s'est réuni le 23 Octobre 1947 à 9 h 30.

I. Compte-rendu.

Les modifications suivantes sont apportées dans la formation du Comité:
M. Went remplace M. Farran (Irlande);
Dr. Cieglewicz remplace le Dr. Lubecki (Pologne);
M. Fridriksson (Islande), nouveau membre.
En l'absence de M. Lea (Norvège), le Dr. Devold prend ses pouvoirs.
Des copies du Rapport administratif pour 1946 (voir ce Volume, II) et du rapport annuel du Président dans les *Annales Biologiques*, Vol. III, sont présentées et considérées comme lues.
Les publications suivantes ronéotypées sont mises en circulation parmi les membres du Comité:
"Travail hydrographique de l'Ecosse en 1947" par J. B. Tait;
"Le Macroplancton de l'Ecosse, Avril—Juillet 1947" par J. H. Fraser.
Le Dr. Tait donne un aperçu des faits principaux de sa publication et il s'ensuit une grande discussion entre les membres et les invités sur un certain nombre de questions d'hydrographie et leur application aux conditions biologiques pendant les mois de printemps et d'été en particulier. La publication paraîtra en temps voulu quand le travail pour 1947 aura été complété.
En l'absence du Dr. Fraser, le Président mentionne rapidement sa note sur les résultats planctoniques récents, en insistant sur les relations étroites entre les résultats donnés et les conditions hydrographiques anormales dominantes.
A l'unanimité, le Dr. R. S. Clark est réélu Président pour l'année prochaine.

II. Discussion de la Note présentée à l'Assemblée Générale.

Les réponses suivantes devant être transmises au Comité Consultatif sont agréées:

1) Octobre.
2) Annuelle.
3) Pas de changement formel, i. e., accord en principe sur la note.
4) Approbation de la note.
5) Pas de changement dans les honoraires. Il est estimé que des dépenses plus grandes seraient provoquées par la nécessité d'augmenter les cadres du Personnel Central si les honoraires devaient être diminués.

III. Programme de Travail.

Le Président et les membres insistent fortement sur l'intérêt d'intensifier la coopération entre les pays participants qui travaillent avec des bateaux de recherches ou des bateaux de commerce dans le secteur nord. Il est proposé que les Présidents des Comités des Secteurs Nord et Sud de la Mer du Nord établissent un plan de recherches pour l'ensemble de la Mer du Nord. Ce plan sera distribué à tous les pays participants et lorsque les réponses auront été reçues, un schéma détaillé sera préparé et mis en circulation.
Le travail suivant à l'intérieur du secteur est proposé:
Angleterre: Sillonnage dans la région du Dogger Bank.
Danemark: Deux croisières du "Dana" entre Avril et Septembre.
France: Observations sur des chalutiers pendant la saison d'hiver et expériences avec l'ASDIC, en collaboration avec la Marine Française, sur les fonds de pêche harenguiers du nord.
Norvège: Coupes hydrographiques sur le "Armauer Hansen"; expériences sur l'ASDIC dans le nord-est de la Mer du Nord.
Suède: Coupes hydrographiques et pêches planctoniques en liaison avec l'Ecosse, la Norvège et le Danemark.

Comité du Sud de la Mer du Nord.

Président: M. R. S. Wimpenny.

Le Comité s'est réuni le 21 Octobre 1947 à 15 h 30 et le 24 Octobre 1947 à 16 h.

I. Compte-rendu.

Après avoir souhaité la bienvenue aux membres présents, le Président note avec regret que la Belgique n'est pas représentée cette année. Il annonce qu'une réunion des experts anglais, français et hollandais se tiendra le 24 Octobre, à 16 heures, pour discuter du programme de travail dans la partie est de la Manche et dans la partie voisine de la Mer du Nord. Cette réunion est rendue nécessaire, car l'Angleterre ne pourra pas se rendre à celle des experts français, hollandais et belges prévue à Paris entre le 18 et le 20 Novembre.

Le Président mentionne le travail fait dans le Secteur et déjà indiqué dans le Rapport administratif et les *Annales Biologiques* pour 1946; il apporte des données concernant son pays mettant en évidence les effets importants de l'intensité de la pêche et des fluctuations. Il y a eu une diminution marquée dans le taux des captures par unité pour la plupart des poissons de chalut étudiés, sauf le merlan; et, l'hiver dernier 1946—47, il y a eu une mortalité considérable de quelques espèces, surtout de la sole, par suite de températures exceptionnellement basses. Des expériences de comparaison sur la pêche ont été effectuées en application de la recommandation de l'année passée. On fait circuler dans l'assistance un court résumé d'une expérience à laquelle participèrent le "Dana" et le "Platessa".

Le Dr. Tåning rapporte le travail de son pays en 1946 et remarque que le taux des rentrées de poissons marqués et re-capturés laisse prévoir que, dans deux ans, le stock de plies dans le sud de la Mer du Nord sera au niveau d'avant-guerre. Durant l'été 1947, le "Dana" a effectué des observations hydrographiques et biologiques dans le sud de la Mer du Nord.

M. Hermann donne alors un état des conditions hydrographiques trouvées dans le secteur. Il apparaît que, d'une façon inusitée, l'eau profonde froide a persisté en 1947 dans l'est, le centre et le sud de la Mer du Nord jusqu'en Août. Des observations ultérieures sur la rigueur des basses températures au cours de l'hiver dernier et au début du printemps 1947 furent faites par le Dr. Jensen qui signala une grande mortalité des soles et des turbots au NW. du Jutland.

Le Dr. Havinga dit que la Hollande espère avoir un bateau de recherches prochainement et que le travail à la côte se poursuit. L'étude de la croissance de la plie d'après les anneaux des otolithes se révèle très difficile. Il donne un court aperçu sur les prises des chalutiers à vapeur hollandais pendant la période 1945—1947 et conclut en disant que, généralement, la densité du stock démersal a considérablement diminué, bien que cette diminution soit masquée par l'énorme apport de jeunes haddocks et par les pêches anormales de morues et de merlans au cours de l'hiver 1946—1947.

Après discussion de la question des statistiques, il est décidé de demander au Comité des Statistiques s'il serait possible de donner avec les chiffres collectés par tous les pays engagés dans la pêche au chalut en Mer du Nord, la position des captures et les poids par unité de temps.

M. R. S. Wimpenny est réélu Président pour l'année prochaine.

II. Discussion de la Note présentée à l'Assemblée Générale.

Les résultats suivants sont obtenus à la majorité:

Date de la réunion annuelle: Octobre.

Fréquence des réunions du Conseil: Annuelle.

Fonction des Comités de Secteurs: Il est convenu qu'une réunion spéciale sera demandée pour éviter toute confusion possible lorsque des questions très importantes intéresseront plusieurs Comités.

Programme des réunions du Conseil: Il est adopté de faire circuler les rapports avant les réunions et que les auteurs les fassent parvenir au moment voulu.

Honoraires: Si la position financière du Conseil l'exige, il y aura réduction; mais avant d'en arriver là, les pays participants seront invités à augmenter leurs contributions.

III. Programme de Travail.

Une discussion a lieu sur les programmes de travaux et sur celui des croisières et il est décidé qu'une coordination beaucoup plus étroite est désirable. Dans ce but, les membres se mettent d'accord pour répandre un large programme général et préliminaire de leurs plans pour l'année à venir. S'il est nécessaire, des amendements seront apportés pour éviter une intermixion et produire l'effort maximum au point et au moment voulus. De plus, les programmes des courtes sorties et les programmes pour l'étude de sujets particuliers seront mis en circulation quand il sera nécessaire.

Les programmes généraux suivants sont arrêtés:

Angleterre: Le marquage des plies se poursuivra

dans des secteurs spécifiés où jusqu'à 5,000 poissons seront marqués en chaque endroit par le M.F.V. "Platessa" et le R.S. "Sir Lancelot". En même temps, ces deux bateaux continueront des expériences sur les effets de la pêche et des engins employés, soit seuls, soit en collaboration avec les bateaux des autres pays membres du Comité. Le "Sir Lancelot" fera des croisières étendues pour étudier les œufs de plies de Décembre à Mars; puis, d'autres croisières au large de la côte est d'Angleterre, au centre de la Mer du Nord, pour faire des observations planctoniques, hydrographiques et générales entre Juin et Octobre. En Octobre et Novembre ce bateau croisera sur les fonds harenguiers à l'est de l'Angleterre afin de surveiller l'état du plancton.

Les deux bateaux anglais seront utilisés à différentes époques pour faire des observations mensuelles aux stations de la ligne Flamborough.

Les mensurations de poissons démersaux et pélagiques seront poursuivies; une attention spéciale sera donnée au stock de plies. Le M.F.V. "Onaway" prospectera les principaux fonds à harengs et expérimentera des engins pour la capture des poissons pélagiques. L'échange d'écailles de harengs et d'informations entre M. Ancellin et M. Gilis sera continué. Des otolithes de plies et des mensurations sur le marché de soles seront échangées avec le Dr. Havinga.

Belgique: Le représentant est absent, mais on s'attend que M. Gilis continue son travail sur la pêche du hareng guai sur la côte belge et il est décidé de demander la reprise des observations de températures et de salinités du West-Hinder.

Danemark: Une croisière sera faite dans le sud de la Mer du Nord une fois au printemps et une fois à la fin de l'été. Des observations biologiques, hydrographiques et de pêches comparées seront effectuées conjointement si possible avec d'autres navires de recherches des pays de la Mer du Nord. Les recherches dans la Waddensea, les expériences de marquages et les mensurations sur le marché seront poursuivies. Les dimensions du chalut Jacobsen seront transmises à la Hollande, à la Belgique et à l'Angleterre, afin que les recherches concertées sur les plies du groupe 0—II puissent être entreprises.

Il est souhaitable que le travail sur le stock de plies et la nourriture des plies du fond du Horn's Reef soit repris.

Ecosse: Une croisière générale sera faite cet été et il est prévu que des observations hydrographiques et planctoniques se feront en coopération avec les navires de recherches des autres pays membres du Conseil. Le travail du nouveau drifter harenguier affecté aux recherches sera établi d'accord avec l'Angleterre.

France: Il est souhaité que la France puisse reprendre très rapidement les déterminations de salinité sur la ligne Newhaven-Dieppe et que, plus tard, les observations du bateau-feu "Sandettié" soient reprises.

La collaboration dans les études sur les harengs d'hiver et les harengs guais sera établie avec le Dr. Hodgson et M. Gilis. M. Ancellin participera aux recherches anglaises sur la plie en donnant des informations sur la maturité des plies pêchées à Boulogne. De La Rochelle, des informations sur la plie et des otolithes seront données par M. Letaconnoux. Des recherches sur les frayères du maquereau et du pilchard entre Dungeness et Beachy Head seront effectuées et les observations anglaises faites dans ce secteur seront transmises au Professeur Le Gall.

Hollande: Les températures et les salinités seront relevées par les bateaux-feu de Maas et d'Haaks.

Le travail sur la composition des stocks de plies sera poursuivi et il est prévu que des observations sur la sole seront entreprises. Des mensurations de cette dernière espèce seront échangées entre l'Angleterre et la Hollande et, si possible, quelques vertèbres seront recueillies. Les mensurations sur le marché se poursuivront dans les ports.

Un nouveau bateau de recherches sera mis en service pendant l'année et effectuera des recherches générales dans les fonds chalutables près de la côte hollandaise. Des expériences comparées sur la pêche seront organisées à bord de ce nouveau bateau, à bord des côtres hollandais et en coopération avec les navires des autres pays.

Pologne: Aucun travail ne sera fait dans le secteur du Comité pendant l'année.

Suède: Aucun travail ne sera fait dans le secteur du Comité pendant l'année.

IV. Recommandation.

Il est décidé de recommander au Conseil, étant donnée l'importance d'évaluer les différentes méthodes de pêche employées, qu'une Réunion Spéciale ait lieu à la prochaine Réunion du Conseil sur l'efficacité comparée des différents modes de pêche, leurs engins et les modifications apportées à ces engins. Au cas où cette réunion serait acceptée, il est proposé que le Dr. Borowik en soit l'organisateur.

Comité du Secteur de Transition.

Président: Dr. E. M. Poulsen.
Le Comité s'est réuni le 22 Octobre 1947 à 9 h 30.

I. Compte-rendu.

1) Des communications sont faites sur le travail effectué dans les différents pays. Des informations sur les points suivants sont apportées et discutées.

(a) Dr. Molander. — Sur la présence de plies du groupe 0 le long de la côte de Suède en 1947.

(b) Dr. Molander. — Sur la variation dans les captures de haddocks dans les années d'après-guerre.

(c) Dr. Jensen. — Sur les recherches danoises sur l'importance des plies du groupe 0 dans les eaux danoises en 1947.

(d) Dr. Jensen. — Sur la forte augmentation de la production de la pêcherie de plies dans le Kattegat après la guerre, provoquée par la fermeture de secteurs à la pêche par suite des conditions de guerre.

(e) Dr. Alf Dannevig. — Sur la distribution des jeunes poissons le long et au large de la côte du Skagerak.

2) Le Dr. E. M. Poulsen est réélu Président pour l'année suivante. Le Comité adopte que le Dr. Aage J. C. Jensen le remplace comme Président pendant son absence.

II. Discussion de la Note présentée à l'Assemblée Générale.

Ad point 3. La réunion annuelle aura lieu pendant la période Octobre—Décembre. En conséquence, il est convenu de modifier, s'il le faut, la date de l'année financière.

Ad point 4. La réunion du Conseil doit se tenir chaque année.

Ad point 5. Le Comité aura la liberté de traiter tout problème intéressant la pêche dans son secteur. Une coordination étroite des programmes de recherches est désirable.

Ad point 6. Les rapports seront mis en circulation si possible avant la réunion et, dans ce cas, il ne sera pas nécessaire de les lire lors de la réunion.

Ad point 7. Les honoraires seront maintenus comme précédemment; les contributions des différents pays pourront être augmentées.

III. Programme de Travail.

Le programme adopté pour l'année précédente est maintenu en vigueur avec les additions suivantes:

1) Les causes de variations annuelles dans l'importance du stock et la distribution des poissons les plus importants seront étudiées. Une coopération étroite entre les pays intéressés sera envisagée.

2) Les investigations en vue d'une augmentation de la taille marchande minimum de la plie et de l'introduction d'autres mesures pour la protection de ce poisson seront entreprises.

3) Il est suggéré, qu'en collaboration étroite avec tous les autres pays intéressés, une étude soit entreprise sur les variations annuelles de la taille et la distribution des poissons communs les plus importants sur toutes les côtes du Skagerak.

IV. Recommandation.

Le Comité adopte les recommandations faites par la réunion des experts du 18 Octobre 1947 (voir Appendice).

Appendice.

Le 18 Octobre, une réunion d'experts s'est tenue au Chateau de Charlottenlund en vue de considérer et de proposer, au point de vue biologique, des mesures pour la protection du stock de *Pandalus borealis*, *Nephrops norvegicus* et *Homarus vulgaris*. A cette réunion assistaient des experts du Danemark, de la Norvège et de la Suède. La Pologne avait été invitée, mais n'avait pu s'y faire représenter.

Des exposés sur les derniers résultats des investigations furent entendus et discutés.

Recommandations.

1) Crevette rouge (*Pandalus borealis*). Comme une diminution du stock a été constatée en certains endroits, les experts considèrent qu'une protection immédiate est nécessaire dans les eaux internationales du Secteur de Transition.

A. La taille minimum de la maille des chaluts utilisés pour la pêche des crevettes rouges sera telle que: la maille, étendue diagonalement dans le sens de la longueur, une jauge plate de 30 mm. de large et de

2 mm. d'épaisseur puisse y passer aisément quand le filet est mouillé.

B. L'ouverture du sac du chalut ne sera pas à l'extrémité postérieure, mais immédiatement en avant, lacée et non nouée.

2) Homard (*Homarus vulgaris*). Sur quelques vieux fonds de pêche, une diminution considérable du stock est observée. Il est adopté que dans le secteur mentionné dans le point 1, à la fois dans les eaux territoriales et extraterritoriales, la taille minimum soit portée de 21 à 21·5 cm. et dans deux ans à 22 cm.

3) Langoustine (*Nephrops norvegicus*). Il est adopté, au point de vue biologique, que le stock serait mieux utilisé si une taille minimum internationale de 15 cm. était introduite dans les eaux mentionnées au point 2.

Comité de la Baltique.

Président: Dr. K. A. Andersson.
Le Comité s'est réuni à 9 h 30 le 23 Octobre 1947.

I. Compte-rendu.

Les communications suivantes sont lues et discutées:

(a) Dr. W. Mankowski: Etudes comparatives concernant la distribution des œufs et larves de harengs, morues et *Onos cimbrius* dans le Golfe de Gdansk en 1938, 1946, 1947.

(b) Prof. T. H. Järvi: Recherches sur le hareng en Finlande.

(c) Dr. A. R. Molander: Jeunes plies dans la Baltique.

(d) Dr. Chr. Hessle: Expérience de marquage sur l'anguille.

(e) Dr. H. Alander: Recherches sur le hareng de la Baltique et sondage par le son de ce hareng.

(f) Dr. Aage J. C. Jensen: Recherches sur le hareng autour de Bornholm.

(g) Dr. Bogucki: Recherches sur la morue Baltique.

(h) Dr. H. Alander: Recherches hydrographiques dans la Baltique.

Le problème concernant la modification de la Convention pour la Baltique Méridionale actuellement en vigueur est discuté. En raison des circonstances politiques actuelles ce problème est ajourné.

La question concernant l'introduction d'une taille minima internationale pour le saumon dans la Baltique est envisagée et pour la même raison remise à plus tard.

Etant donné que le Dr. K. A. Andersson ne désire pas conserver ses fonctions de Président, le Dr. Chr. Hessle est élu Président pour l'année suivante.

II. Discussion de la Note présentée à l'Assemblée Générale.

Ad Point 3. La réunion annuelle aura lieu pendant la période Octobre—Décembre.

Mais tenant compte du désir que le budget financier annuel doit être adopté par le Conseil avant le début de cette année, le Comité propose que l'année financière actuelle soit modifiée pour correspondre à l'année du calendrier (1er Janvier—31 Décembre).

Ad point 4. La réunion du Conseil doit se tenir chaque année.

Ad point 5. Le comité aura la liberté de traiter tout problème intéressant la pêche dans son secteur. Une coordination étroite des programmes de recherches est désirable.

Ad point 6. Les rapports seront mis en circulation si possible avant la réunion et, dans ce cas, il ne sera pas nécessaire de les lire lors de la réunion.

Ad point 7. Les honoraires seront maintenus comme précédemment; les contributions des différents pays pourront être augmentées.

III. Programme de Travail.

Le programme adopté pour l'année précédente sera maintenu avec addition des articles suivants:

1) Les expériences de marquage sur les anguilles devront être pratiquées dans le but d'étudier plus en détail les migrations de l'anguille.

2) L'arrivée et l'avancée de l'eau salée à travers la Baltique devra être étudiée en coopération entre les savants des pays intéressés.

3) Une coopération plus intime dans les projets et exécutions, spécialement pour les recherches actuelles sur la morue.

Rapports et Programmes des autres Comités.

Comité Hydrographique.

Président: Professeur Martin Knudsen.
Le Comité s'est réuni le 20 Octobre à 14 h 30, le 21 à 11 h, le 22 à 14 h 30 et le 23 à 16 h.

I. Compte-rendu.

Le Président souhaite la bienvenue aux membres. Les nouveaux membres suivants sont nommés: Dr. Ramalho (Portugal), M. Thomsen (Danemark) et M. Went (Eire), ce dernier à la place de M. Farran en retraite.

L'Hydrographe du Conseil expose les travaux effectués au Service Hydrographique depuis la dernière réunion. La Recommandation 1 est adoptée.

Suivant une information fournie par le Dr. Carruthers, il existe des données hydrographiques allemandes inédites sur les mers étudiées par le Conseil. La Recommandation 2 est adoptée.

Le Prof. Mosby expose l'activité de l'Association Internationale d'Océanographie Physique en ce qui concerne les observations océanographiques des navires météorologiques de l'Atlantique. Ladite Association a chargé un Comité (Président Dr. R. H. Fleming) de considérer l'ensemble de la question.

Une discussion s'engage en ce qui concerne: — l'opportunité de proposer un programme défini pour ces bateaux météorologiques, — la question d'impression et l'utilisation des résultats. La Recommandation 3 est adoptée.

Le Comité du Plancton a transmis une proposition de recommandation (Rec. 4) qui est adoptée par le Comité Hydrographique.

Les membres exposent les projets de recherches hydrographiques à la mer pour l'année qui vient. A ce sujet, le Dr. Eggvin insiste sur l'importance d'une coordination du travail dans les divers pays. M. Lumby exprime l'opportunité de développer le réseau des routes de prises d'eau de surface, spécialement en Mer du Nord.

Le Professeur Mosby fait un exposé sur son appareil d'enregistrement automatique des températures de la mer le long d'une ligne verticale, le "thermo-sondeur".

Un rapport du Sous-Comité pour l'Organisation des Recherches hydrographiques et biologiques combinées est déposé devant le Comité (voir plus loin). La Recommandation 6 est adoptée.

Le Dr. Carruthers, à qui le Président avait demandé s'il avait quelque communication intéressant le Comité en ce qui concerne l'Allemagne, répond qu'il a apporté, pour les déposer sur le bureau, quelques notes qui pourront être examinées par les intéressés.

Le Président fait savoir que le Conseil est invité à envoyer des représentants à la réunion de l'Association Internationale d'Océanographie Physique à Oslo l'an prochain. La Recommandation 5 est adoptée.

Le Président demande aux membres du Comité de prendre en considération la nomination d'un nouveau Président, estimant qu'une personne plus jeune devrait maintenant lui succéder à la présidence.

M. Helge Thomsen est élu Président pour l'année suivante.

M. Lumby propose un vote de chaleureux remerciements au Professeur Knudsen pour les services qu'il a rendus comme Président du Comité durant plus de vingt ans et pour sa contribution au développement de l'hydrographie dans l'Univers. Ces paroles sont chaleureusement applaudies.

M. Thomsen exprime l'espoir que le Comité dans les années à venir bénéficiera de l'aide et de l'expérience du Professeur Knudsen.

II. Discussion de la Note présentée à l'Assemblée Générale.

La date de réunion du Conseil est discutée. La majorité se prononce pour Octobre, tandis qu'une minorité préférerait avoir la réunion en Mai. Quant à la fréquence des réunions du Conseil, la grande majorité est favorable à une réunion annuelle.

III. Recommandations.

1) Il est recommandé que les notes suivantes soient imprimées dans les publications du Conseil.

J. P. Jacobsen: Quelques traits caractéristiques de la variation de la température de surface dans le Nord Atlantique.

Jens Smed: Sur l'échange d'eau entre la Mer de Norvège et la Mer du Nord.

2) Il est recommandé que les données allemandes inédites sur les températures et salinités de secteurs couverts par le Bulletin Hydrographique soient incorporées au Bulletin à l'exception des données côtières d'intérêt purement local.

3) Il est considéré comme désirable que tous les pays armant des navires météorologiques entreprennent aussitôt que possible des observations océanographiques à bord. Jusqu'à ce qu'un programme commun ait été agréé, les Etats travailleront suivant le meilleur programme qu'il leur est possible d'entreprendre. La décision d'un travail suivant un programme commun sera laissée au Comité relevant de l'Association Internationale d'Océanographie ("Comité Fleming") à sa réunion qui doit avoir lieu à Oslo en Août 1948. Il est à souhaiter qu'à cette réunion des directives complètes soient données à la fois sur le mode de travail et la publication des résultats.

4) Il est recommandé que les membres du Comité Hydrographique faisant partie du "Comité Fleming" pour le travail océanographique à bord des navires météorologiques prennent leurs dispositions pour que:

(a) le Comité du Plancton soit informé par l'intermédiaire de son Président du travail hydrographique à effectuer à bord des divers bateaux.

(b) des observateurs du Comité du Plancton soient invités à la réunion du "Comité Fleming" à Oslo en Août 1948[1]).

5) Il est recommandé que le Président du Comité Hydrographique, M. Helge Thomsen, et l'hydrographe au Conseil M. Jens Smed représentent le Conseil à la Réunion de l'Association Internationale d'Océanographie à Oslo en Août 1948[1]).

6) Il est recommandé qu'une réunion comprenant MM. Eggvin, Lumby, Tait, Thomsen et Zeilon ait lieu durant trois jours, à la fin de l'automne de cette année, pour préparer la publication des résultats hydrographiques des recherches de cette année telles qu'elles ont été effectuées sous les auspices du Sous-Comité pour l'Organisation des Recherches hydrographiques et biologiques combinées, et, en outre, pour organiser de nouvelles recherches suivant les mêmes directives.

[1]) Amendé par le Comité Consultatif (et admis par le Conseil) pour que les Présidents des Comités Hydrographiques et du Plancton représentent le Conseil à la Réunion de l'Association Internationale d'Océanographie à Oslo en 1948.

Appendice.

Sous-Comité pour l'Organisation des Recherches Hydrographiques et Biologiques Combinées.

Président: Dr. H. Blegvad.

Le Sous-Comité s'est réuni le 21 Octobre à 14 h 30 et le 23 à 11 h 30.

Le Président en ouvrant la séance attire l'attention sur les recherches effectuées au printemps dernier dans le nord de la Mer du Nord sous les auspices du Sous-Comité.

Le Professeur Fjelstad donne lecture d'une note sur les vagues internes. M. Rollefsen demande des renseignements sur les transports et le renouvellement d'eau dans les fjords. Le Professeur Fjelstad et le Dr. Eggvin répondent.

Le Professeur Zeilon donne un bref résumé des recherches effectuées conformément au programme établi à la réunion de Göteborg en Février 1947 et donne, en outre, des détails sur la participation suédoise à ces investigations. La situation hydrographique a été très anormale compte-tenu de l'homogénéité prononcée de l'eau.

Le Dr. Eggvin présente un rapport sur les résultats de la participation norvégienne: travail au cours des croisières et à 9 stations fixes le long de la côte norvégienne. Il résulte du matériel abondamment récolté que la température a été anormalement basse.

M. Lumby donne des renseignements sur les résultats d'une croisière anglaise cette année dans le nord de la Mer du Nord.

M. Hermann expose la participation danoise dans le secteur. Les résultats s'accordent avec les recherches mentionnées plus haut.

Le Dr. Tait expose les recherches écossaises, qui ont donné des résultats semblables. Pendant le printemps et l'été, un blocage des eaux atlantiques, provoqué par un influx d'eaux du nord, a été constaté dans le canal Féroës-Shetlands. Les eaux atlantiques ont cessé d'être bloquées en Septembre.

Il est décidé que chaque pays travaillera ses propres résultats et que ceux-ci seront publiés dans une note commune. Le Dr. Eggvin accepte d'être l'éditeur de cette publication.

En outre il est recommandé que des dispositions soient prises en faveur de MM. Eggvin, Lumby, Tait, Thomsen et Zeilon pour qu'ils se réunissent pendant 3 jours à la fin de l'automne en vue de discuter des résultats de cette année et d'organiser les recherches

pour l'année prochaine suivant les mêmes directives. Le Dr. TÅNING propose que le travail biologique soit réalisé en relation avec les recherches hydrographiques. Après discussion, il est décidé qu'un programme préliminaire pour le travail à venir sera établi lors de cette réunion et distribué aux membres du Comité du Plancton. L'organisateur de la réunion, le Professeur ZEILON, sera ensuite prêt à recevoir et examiner les vœux de divers biologistes.

Le Dr. BLEGVAD déclare que par manque de temps il désire se retirer de la présidence du Sous-Comité, et propose le Dr. EGGVIN comme son successeur.

Le Dr. EGGVIN est élu Président pour l'année suivante.

Comité du Plancton.

Président en exercice: Dr. P. JESPERSEN.
Le Comité s'est réuni le 23 Octobre 1947 à 14 h 30.

I. Compte-rendu.

Le Dr. RUSSELL étant dans l'impossibilité d'assister à la réunion, le Dr. JESPERSEN prend la présidence. M. WIBORG remplace le Dr. RUUD en qualité de membre norvégien du Comité et le Dr. MANKOWSKY est adjoint comme membre pour la Pologne.

Le Président attire l'attention des membres sur le travail effectué en 1946; le Rapport administratif est accepté. Il est annoncé que dix fiches de zooplancton sont sous presse et que quatorze autres sont en préparation; des savants sont demandés à préparer d'autres fiches.

En ce qui concerne une lettre du Dr. BRANDES relative à un travail sur le plancton du Bassin de Bornholm, rédigé par le Dr. E. HENTSCHEL décédé, il est décidé que l'examen de cette étude en vue d'une publication sera différé jusqu'à l'année prochaine.

Le Dr. S. M. MARSHALL remet une étude sur "L'effet de la fertilisation sur le plancton du Loch Craiglin", petit loch maritime.

Des articles concernant le Sous-Comité pour la standardisation des collections de zooplancton sont examinés et le Dr. MARSHALL et M. K. F. WIBORG rendent compte des expériences avec les pompes à plancton et les collecteurs. Une intéressante discussion est soutenue sur ces deux sujets et il est décidé que le Sous-Comité pour l'étude des pompes à plancton et les filets quantitatifs continuera son activité.

Le Dr. BRAARUD fait une mise au point de la question des collectes biologiques provenant des navires météorologiques et les résolutions suivantes sont transmises au Comité Hydrographique, à savoir:

1) que le Comité du Plancton soit informé par l'intermédiaire de son Président du travail hydrographique à effectuer à bord des divers bateaux;

2) que des observateurs du Comité du Plancton soient invités à la réunion du "Comité Fleming" à Oslo en Août 1948.

Le Dr. F. S. RUSSELL est réélu Président.

II. Discussion de la Note présentée à l'Assemblée Générale.

Le Comité prend les décisions suivantes:

Date de la réunion annuelle: Octobre.

Fréquence des réunions: Annuelles.

Fonction des Comités de Secteurs: Hors des attributions du Comité.

Programme des réunions: Approuvé.

Honoraires: S'il est nécessaire, des contributions augmentées seront obtenues auprès des pays participants; faute de ceci seulement les honoraires seront réduits.

III. Recommandation.

Le Comité décide de recommander au Conseil que la publication des feuilles d'identification du plancton soit continuée pendant l'année à venir.

Comité du Saumon et de la Truite.

Président: Professeur KNUT DAHL.
Le Comité s'est réuni le 21 Octobre 1947 à 9 h 30.

I. Compte-rendu.

M. SØMME est élu comme Secrétaire de réunion.

M. VIBERT soulève la question d'un travail en coopération sur le saumon du Bassin du Rhin, et, après une courte discussion, le Comité adopte que les pays intéressés par la question du Rhin nomment un comité, établissent un plan de travail et prennent contact avec le Conseil International à ce sujet.

Les représentants des différents pays rendent compte des recherches faites sur le plan d'une coopération internationale.

Il apparaît que le manque de "marques" a provoqué des difficultés pour réaliser le programme en Eire, France et Islande. Le manque de personnel approprié a empêché les opérations de marquage en Ecosse. Des saumons immatures ont été marqués en Angleterre, Norvège et Suède. En Angleterre 57 saumons et 9 truites de mer ont été marqués, onze recaptures ont été signalées jusqu'en Octobre 1947 et deux marques ont été renvoyées sans les poissons. En Norvège, 244 saumons ont été marqués à deux stations côtières. Jusqu'en Octobre 1947, 88 recaptures avaient été signalées, une de Suède, les autres de Norvège.

En Islande, 401 saumons et 109 truites de mer ont été marqués d'entailles faites sur les nageoires.

En Pologne, 5,000 smolts seront marqués l'année prochaine.

En Norvège, 326 smolts ont été marqués dans la rivière Sandvika près d'Oslo en Mai 1947.

Les résultats de tous les marquages dans le secteur de la Baltique ont été rapportés dans une étude du Professeur T. H. JÄRVI. Un extrait en anglais sera adressé au Conseil International.

M. OTTERSTRØM a préparé une étude sur l'identification du saumon et de la truite de mer[1]).

Le Professeur KNUT DAHL est réélu Président pour l'année suivante; remplaçant: M. S. SØMME.

II. Discussion de la Note présentée à l'Assemblée Générale.

1) L'opinion du Comité est que: les réunions annuelles du Conseil soient maintenues comme à présent si l'année financière peut être modifiée; ou aient lieu dans le milieu de l'hiver, ou au début du printemps, si l'année financière actuelle est maintenue. Les réunions de Mai et des mois d'été ne sont pas favorables pour les recherches sur le saumon et la truite.

2) Le Comité adopte les réunions annuelles.

3) Les fonctions des Comités de Secteurs ne sont pas du ressort du Comité.

4) Le Comité adopte la proposition faite dans la Note de l'Ordre du jour.

5) Etant donné la somme de travail faite par le Président du Comité, celui-ci est d'opinion que les honoraires actuellement payés ne sont pas excessifs et ne doivent certainement pas être réduits.

III. Recommandation.

Il est recommandé, à la suggestion de M. WENT, qu'un rapport sur les méthodes de capture des poissons anadromes dans chaque pays participant soit préparé et mis en circulation entre les membres.

[1]) L'étude sera publié dans le *Journ. du Conseil*, Vol. XV, No. 2.

Comité de la Baleine.

Président: Dr. N. A. Mackintosh.
Le Comité s'est réuni le 23 Octobre 1947 à 15 h 30.

Compte-rendu.

Le Président, se référant à la Conférence Internationale de la Baleine qui eut lieu à Washington en 1946, déclare que les résultats doivent être recherchés: non dans l'institution de nouvelles règlementations mais dans la rédaction d'une nouvelle Convention qui placera la règlementation sur de meilleures bases pour l'avenir. M. Dobson donne un bref aperçu de la Conférence et le Comité note avec satisfaction que de nouveaux pays ont adhéré à cette Convention. Il remarque aussi qu'une Commission a été établi avec les pouvoirs voulus pour modifier les règlements de temps en temps.

Le Président donne un aperçu des progrès dans le domaine de la pêche à la baleine dans l'Antarctique depuis la guerre. Les captures réalisées en 1945—46 ont été relativement pauvres; mais la saison 1946—47 a donné de meilleurs résultats. On espère que 17 bateaux-usines travailleront dans l'Antarctique en 1947—48, et il est probable que le nombre limite de capture, fixé à 16,000 unités de baleines bleues, sera atteint avant la date de fermeture. Ceci conduit à une discussion sur le nombre limite, discussion à laquelle M. Maurice, Dr. Hjort, Prof. Ruud et d'autres prennent part. Le maintien du stock de baleines à un taux suffisant est-il plus ou moins important que la nécessité immédiate d'accroître les ressources en graisses de baleine? Ceci est en dehors des attributions du Comité.

Celui-ci, néanmoins, juge que, du point de vue biologique, une augmentation quelconque dans le nombre limite de 16,000 pourrait entraîner une baisse future du stock et, qu'en fait, ce chiffre de 16,000 peut encore être trouvé trop élevé. On remarque aussi que si le chiffre varie, il sera beaucoup plus difficile d'évaluer le stock de temps en temps.

Le Comité discute ensuite de quelques-uns des problèmes biologiques qui, normalement, sont examinés par la Commission. Parmi ceux-ci se trouve la question de la protection des mégaptères (*Megaptera boops*) dans l'Antarctique et la nécessité possible de délimiter certaines zones comme refuges.

Le Président suggère (bien que des recommandations définitives puissent difficilement être faites actuellement), qu'il est utile d'attirer l'attention sur quelques points qui doivent être pris en considération. Dans l'acte final signé à Washington, il est recommandé que l'interdiction de la capture des mégaptères par les bateaux-usines devrait être levée ou qu'une limite devrait être établie quant au nombre d'individus à capturer dans l'Antarctique et les Tropiques. Le Comité note que la suppression sans condition de cette interdiction peut entraîner un abaissement sérieux du stock de mégaptères. Si des limites doivent être établies pour les prises de cette espèce, il sera nécessaire d'examiner séparément les principales communautés de mégaptères dans l'hémisphère sud. Si des refuges doivent être institués, il y aura, de nouveau, différentes possibilités à considérer. Par exemple, un refuge permanent pourrait être maintenu dans le secteur du Pacifique ou bien des zones pourraient être fermées à tour de rôle. On devra prendre en considération l'état du stock de chaque espèce pour autant qu'il soit connu dans les différents secteurs.

Le Comité reçoit quelques informations sur les progrès des recherches sur les baleines. M. Lienesch déclare que des biologistes ont travaillé sur le bateau-usine "Willem Barendsz". Le Président déclare que le "Discovery Committee" continue à récolter, comme auparavant, des données venant des bateaux-usines et que le dénombrement des corps jaunes des ovaires indique un recrutement favorable pour le stock de jeunes baleines bleues.

Le Prof. Ruud donne ensuite des résultats sur la détermination de l'âge des baleines par l'examen des fanons. Ce travail prouve aussi que les jeunes baleines sont bien représentées dans le stock actuel, et que l'âge auquel les baleines deviennent adultes, quoique variable, est généralement plus élevé qu'on ne le supposait auparavant.

Le Dr. Mackintosh est réélu Président pour l'année suivante.

II. Recommandation.

Le Comité est d'avis que toute augmentation actuelle du nombre limité à 16,000 unités de baleines bleues en Antarctique entraînerait un risque sérieux pour la conservation à longue échéance du stock des baleines.

Comité Statistique.

Président en exercice: Dr. Nils Rosén.
Le Comité s'est réuni le 22 Octobre à 14 h 30.

I. Compte-rendu.

1) Le Bulletin Statistique de 1939 est présenté au Comité, 1ère Partie (Introduction), seulement manuscrite; 2ème Partie (Statistiques), sur épreuve imprimée.

2) La possibilité d'obtenir plus de matériel pour certains tableaux dans le prochain Bulletin est discutée.

3) La conversion en "poids équivalents" des mollusques est discutée.

Le Comité décide, après discussion, que les statistiques des années 1940—1944 seront imprimées en un seul volume.

5) Le Comité décide d'utiliser l'année 1938 comme année de comparaison dans les Bulletins suivants.

6) M. Wimpenny pense qu'il serait désirable, si possible, d'obtenir les statistiques concernant les quantités et la distribution des stocks de poissons dans de petites régions du sud de la Mer du Nord. Le Comité décide d'essayer d'obtenir plus d'informations.

7) Il est décidé, après discussion, que le Comité Statistique préparera un rapport préliminaire annuel: sur les quantités débarquées et leur valeur, dans la colonne Part II. Table I: "Valeur totale et Produits de la Pêche Maritime", et relatif aux cinq espèces les plus importantes; puis, que ce rapport soit publié dès que possible à la fin de chaque année. Les informations seront fournies par chaque pays dès qu'elles seront réclamées par le Service Statistique du Conseil.

8) Le Comité propose la réélection à la présidence de Sir d'Arcy Thompson pour l'année suivante et, en son absence, Dr. Nils Rosén.

II. Discussion de la Note présentée à l'Assemblée Générale.

L'opinion de la majorité est que la réunion du Conseil devrait se tenir chaque année en Mai; et que, si les travaux accomplis par les divers Présidents devaient être faits par le personnel du Service Central, l'économie des honoraires pourrait être inférieure à l'accroissement des frais. Le Comité recommande que les honoraires actuels soient maintenus à la présente échelle.

III. Recommandation.

Après discussion, on est d'accord pour demander au Comité Consultatif qu'un Sous-Comité spécial du Comité Statistique soit appelé à discuter au commencement de 1948 les propositions suivantes:

Considérer la méthode présente de relèvement et de compilation des statistiques et la nécessité de modifier et de développer ces statistiques dans l'intérêt des investigations de biologie habituelle.

Le Sous-Comité serait composé de représentants du Conseil, du Service statistique des Pêches des principaux pays intéressés par la pêche et de la division F.A.O. des Pêcheries. Le Président en exercice du Comité Statistique (Dr. Rosén), Dr. Borowik et M. Graham sont désignés pour faire partie de ce Sous-Comité.

RAPPORTS

ET

PROCÈS-VERBAUX DES RÉUNIONS

VOLUME CXXI

2ÈME PARTIE

RAPPORT ADMINISTRATIF

(1946)

REPORT

of

ADMINISTRATION FOR THE YEAR ENDING JULY 21st 1947

I. General.

Composition of the International Council for the Exploration of the Sea.

The official announcements of further participation for the period 1945—1950 have now been received from all the participating Governments except Eire, which has announced her participation as from the financial year 1946/47 only, not having been able to send representatives to the Council Meeting in 1945.

Portugal has sent a contribution as from 1946/47 announcing their desire to resume participation in the Council's work.

From the countries invited through diplomatic channels to join the Council replies have been received from the following: Newfoundland has expressed regret that she was unable to accept the invitation to adhere to the Council. The United States replied that it would not be feasible to join and although they appreciated the Council's invitation they believed that the desired purpose could best be achieved by continuous close collaboration between the fishery research organizations of the U.S.A. and the International Council for the Exploration of the Sea. Canada has replied to the effect that they were still considering the question. Canada will send an observer to the Meeting. From the U.S.S.R. no reply has so far been received.

Composition of the Bureau.

No change in the composition of the Bureau has taken place during the past year, and the Bureau thus consists of: Professor Dr. Johan Hjort, President, Mr. A. T. A. Dobson, Professor Dr. Martin Knudsen, Dr. K. A. Andersson and M. Pierre Tissier, Vice-Presidents. Mr. Henry G. Maurice is Président d'Honneur with the right to attend the Bureau meetings.

Committees.

A list of Committees will be found in the Procès-Verbaux of the last Council Meeting. These Committees remain in being and no change of membership has been announced up to date.

Meetings.

Meetings of the Bureau took place in August, 1946, in Stockholm and in May, 1947, in Copenhagen. At the first-named meeting all Members and the General Secretary were present; at the latter Professor Knudsen was prevented from taking part on account of illness.

At a Meeting in Gothenburg on February 26th—27th for planning international oceanographical co-operation Messrs. Jens Eggvin, Bergen, and Helge Thomsen, Copenhagen, attended at the Council's expense.

M. Pierre Tissier represented the Council at the meeting of UNESCO in Paris in November 1946 and Dr. J. le Gall has represented the Council at the Meeting of the International Hydrographic Bureau at Monaco in May, 1947.

Audit of Accounts.

The Accounts for 1945/46 have been audited by the Finance Committee and await the approval of the Council.

The Accounts for 1946/47 have been audited by a qualified accountant and are presented overleaf with the signatures of the auditors, the President, Prof. Knudsen, and myself.

The Statement of Accounts gives rise to the following remarks:

Expenditure. The sum of 12,900 Kr. to the Hydrographer and the Hydrographical Secretary has

Income and Expenditure Account for the year ending July 21st 1947.

EXPENDITURE

I. Incidentals.

1. President	6,000.00	
2. Vice-President	3,000.00	
3. Editor of the Journal	6,000.00	
4. Editor of Statistics	2,000.00	
5. Chairman of Consultative Committee	3,000.00	
6. Chairmen and Vice-Chairman of Committees	22,000.00	
7. Editor of Plankton Sheets	1,000.00	
		43,000.00

II. Headquarter Staff.

1. General Secretary	9,000.00	
2. Biological Assistant	3,000.00	
3. 1st Assistant Secretary	9,000.00	
4. 2nd Assistant Secretary	6,900.00	
5. Statistical Secretary	6,900.00	
6. Clerical Assistant	4,800.00	
7. Clerical Assistant	4,500.00	
8. Clerical Assistance	3,600.00	
		47,700.00

III. Hydrographical Staff.

1. Hydrographical Consultant	3,000.00	
2. Hydrographer	10,931.75	
3. Hydrographical Assistance	1,968.25	
4. Hydrographical Assistance	3,600.00	
		19,500.00
At disposal for General Secretary for augmentation of salaries		7,851.48

IV. Office Expenses.

1. Rent	5,580.00	
2. Light and Heating	1,187.66	
3. Stationery, books etc.	2,820.98	
4. Telephone, telegrams etc.	1,229.75	
5. Furniture and fittings	1,065.00	
6. Insurance	1,590.06	
7. Upkeep, cleaning etc.	2,571.39	
8. Miscellaneous	2,606.64	
		18,651.48
V. Travelling Expenses		13,284.75

VI. Printing and Distribution.

1. Printing	24,270.30	
2. Drawings, translations etc.	1,198.45	
3. Distribution	118.36	
		25,587.11
VII. Pension Fund		3,500.00

VIII. Extraordinary Expenditure.

Mrs. Jacobsen	2,500.00	
Mr. Paul Hansen (N.W. Area Ctee. Rec.)	2,000.00	
Card-Index (Hydr. Ctee Rec.)	1,500.00	
		6,000.00
Total Expenditure		185,074.82

INCOME

I. Contributions.

1. 1945/46:		
Poland	10,000.00	
Spain	10,000.00	
		20,000.00
2. 1946/47:		
France	20,000.00	
Great Britain	20,000.00	
Denmark	10,000.00	
Eire	10,000.00	
Norway	10,000.00	
Poland	10,000.00	
Spain	10,000.00	
		90,000.00
3. Contribution from Portugal for 1946/47 and further		13,310.73
4. Outstanding Contributions:		
Belgium	10,000.00	
Iceland	10,000.00	
Sweden	10,000.00	
		30,000.00

II. Interests.

1. On Bank Deposits	1,008.05	
2. On Investments	5,238.22	
		6,246.27
III. Sale of Publications		1.500.50
Total Income		161,057.50
Excess of Expenditure over Income		24,017.32

Kr. 185,074.82

Statement of Pension Fund Accounts 1946—47.

EXPENDITURE		INCOME	
Balance as per July 22nd, 1947	108,373.46	Balance as per July 22nd, 1946	100,417.10
		Transferred from revenue	3,500.00
		Interests	4,456.36
	Kr. 108,373.46		Kr. 108,373.46

Balance Sheet, July 21st, 1947.

LIABILITIES			ASSETS		
Capital Reserve:			Cash at Handelsbanken	92,203.45	
Balance as per July 22nd 1946	291,802.04		Cash at Ordrup-Charlottenlund Bank	2,800.57	
Less Eire's Contributions estimated for 1945/46	10,000.00		Cash at Postgiro	22,954.83	
	281,802.04		Cash in hand (Deposits included)	690.52	
Less Excess of Expenditure over Income	24,017.32				118,649.37
		257,784.72	Danish Treasury Bonds as per July 21st 1947, nominal value Kr. 126,100.00 at cost		123,611.40
			(Market value on July 21st 1947: 130,482.25.)		
Pension Fund		108,373.46	Pension Fund:		
		366,158.18	Cash at bankers	628,05	
			Debtors (Interests per July 21st 1947)	1,425.61	
Sundry Creditors		25,860.82	Danish Treasury Bonds (nominal value 108,500.00)	106,319.80	
			(Market value on July 21st 1947: 112,642.75)		108,373.46
			Debtors as per July 21st 1947:		
			Contributions for 1940/41 (Eire)	10,000.00	
			Contributions for 1946/47	30,000.00	
			Interests per July 21st 1947	1,374.77	
			Sundry Debtors	10.00	
					41,384.77
		Kr. 392,019.00			Kr. 392,019.00

We have scrutinized the foregoing Accounts and Balance Sheet and are satisfied that it is correct.

(sign.) Martin Knudsen. H. Blegvad.

Johan Hjort.

We have compared the above Balance Sheet with the Books and Vouchers of the Council, and certify that it is in accordance therewith. We have verified the existence of the cash on hand and at bankers as well as of the Treasury Bonds.

Copenhagen, September 26th 1947.

Revisions- og Forvaltnings-Institutet Aktieselskab.

(sign.) J. Ejlersen, (sign.) H. Juul-Andersen.

State-Certified Auditor.

been disposed of by the former Hydrographical Secretary, Mr. JENS SMED, taking over as a full time appointment the duties of the Hydrographer, the late Dr. JACOBSEN, who worked part time only. To the post a salary analogous to that of a Danish State Meteorologist has been allotted, i. e., including cost-of-living bonus, a total amount for 1946/47 of Kr. 10,931.75. The Balance of the estimated 12,900 Kr. has been used for assistance. The 8,000 Kr. allotted for augmenting the salaries of the 2nd Assistant Secretary, the Statistical Secretary and the Assistants, has been disposed of so as to make salaries as from the financial year 1946/47 comparable to salaries paid by the Danish State for posts of a similar character. This arrangement will involve these salaries as well as that of the Hydrographer following the price-index, and in future the items "Headquarter Staff" and "Hydrographical Staff" will be subject to changes with the index. "Office Expenses" shows a minor saving of about 750 Kr. and "Travelling Expenses" a saving of about 6,000 Kr. as the meeting of Sardine Experts for which provision was made has not yet taken place. In respect of "Printing" there will this year be a saving of about 19,400 on account of the printers' strike in Copenhagen which prevented the printing of most of the ordinary publications.

Income. The Income amounts to Kr. 161,057.50. The excess of Income over Expenditure amounts to Kr. 24,017.32. The necessity of writing off the contribution from Eire for 1945/46 has been balanced by the unexpected receipt of a contribution from Portugal for 1946/47. Interests have given about 500 Kr. more than estimated. During the last years an enormous number of Danish Bonds have been drawn, and while none of those of the Council's capital proper have been drawn during the financial year, several bonds belonging to the Pension Fund have. Unfortunately the tendency is to pay lower interests on bonds and thus the Income through interests will gradually diminish.

Balance Sheet.

Comparing this year's Balance Sheet with that of the preceding year it will be noted that the reserve has been diminished to Kr. 257,784.72 as against Kr. 291,802.04 last year.

The Pension Fund has increased from Kr. 100,417.10 to Kr. 108,373.46 partly from the standing vote of Kr. 3,500.— partly from interests.

From the last 5-year-period (1936—41) Kr. 10,000 from Eire is still outstanding. Contributions for the year 1946/47 have not yet been received from Belgium, Iceland and Sweden[1]).

II. Work at the Central Office in Copenhagen.

No changes in the staff and their work at the Central Office have taken place, but the Statistical Secretary, Miss HANSTED, is relinquishing her post as from November 1st and Miss CHRISTIANSEN will take over the work single-handed.

Publications and Library.

During the past year, we have had to cope with still increasing difficulties. A printers' strike from March 1st to July 15th brought all activities to a stand-still. The *Annales Biologiques* Vol. II, 1942—1945, of which practically all sheets had been printed in February, is only just now ready for publication, as are the reports of the Stockholm meeting in August, 1946: Proc.-Verb. and Administrative Report (Rapp. et Proc.-Verb. Vol. No. 117), Scientific Meeting (Rapp. et Proc.-Verb. Vol. No. 118), and the first post-war issue of the *Journal du Conseil* (XV, 1). Professor Järvi's Salmon Report (Rapp. et Proc.-Verb. Vol. No. 119) is about being ready in the first proof, and the Faxa Bay report (Rapp. et Proc.-Verb. Vol. No. 120) is being composed. The Zooplankton Sheets have been increased by number 7 a—c, dealing with the Appendicularia, by A. BÜCKMANN. Numbers 8-10 — Pteropoda Thecosomata, by J. J. TESCH, and Thaliacea I and II, by J. H. FRASER — are in the Press.

The office has made every effort to ensure a prompt publication of the Council's papers. The Faxa Bay report, by the kind assistance of Dr. K. A. ANDERSSON, has been accepted for printing by a Swedish firm in Stockholm, and the report of the Scientific Meeting—which will fill only some 30 pages—is being reproduced photostatically. The latter report is expected to be issued very shortly; we have not yet received the proofs of the former.

The work on the current issues—Administrative Report for 1946 and *Annales Biologiques*, III, 1946, has unfortunately also been delayed. Most of the manuscripts have now been received and the material has been sent to the printers; it is hoped that proof prints may be available for distribution at the meeting in October.

The exchange relations with other institutions are being resumed to a steadily increasing extent, and new requests and proposals are being received from many quarters. The sale has likewise increased perceptibly.

Statistical Department.

The compiling of the Bulletin Statistique for 1939 has been completed and the manuscript sent to the printers. It is hoped that a proof print can be forwarded to the members of the Statistical Committee before the meeting in October.

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[1]) Received on September 6th, 1947.

The compiling of the *Bulletin Statistique* for 1940—45 is well advanced in so far as the material is to hand.

Hydrographical Department.

The work of the Service Hydrographique has been carried out under the supervision of the Hydrographic Consultant to the Council, Prof. Martin Knudsen. The staff consisted of: Mag. scient. Jens Smed (Hydrographer), Mrs. Poula Holm (Assistant) and some occasional assistance.

The following works were carried out:

Bulletin Hydrographique. According to a recommendation from the Meeting of the Hydrographical Committee in 1946 an issue of the Bulletin, comprising the years 1940—1946 and with appendices for the years 1936—1939, were to be published. Some material has been received for this issue and has been prepared in manuscript form. Much material is, however, still lacking.

Off-prints have been prepared of part of the material received and copies have been delivered on request.

Hydrographical-Biological Card Index. In accordance with a recommendation from the Meeting of the Hydrographical Committee in 1946 the card index has been divided into a biological and a hydrographical section and the biological section has been stored. Means of surface temperatures from the North Atlantic recorded from the Danish Nautical-Meteorological Annals have been cancelled. The revision of the card index has been brought to a preliminary completion, checking now being extended to all observations north of 47° N. In connection with the checking the card index has been augmented with a great many observations. A note containing references to the contents of the card index and the supplying of copies to persons interested will be published in the *Journal du Conseil*.

Scientific Working-up of Hydrographical Material. The calculation of monthly anomalies of the surface temperature in areas of the northern part of theNorth Atlantic has been continued in order to study the variations from year to year of the surface temperature in these waters. For some areas the computations have been completed. The results will be summarized for publication in the *Annales Biologiques*.

Working-up of the hydrographical material from sections covering the northern entrance to the North Sea has been continued in order to determine the exchange of water between the Norwegian Sea and the North Sea.

Coordination of Surface Sampling. In order to meet the requirements of a recommendation from the Hydrographical Committee questionaries have been sent to the members of this committee asking for information concerning water sampling from commercial vessels and lightships in the various countries, and the answers received have been circulated to the members.

Atlantic Weather Ships. A plan for hydrographic observations to be carried out from the Atlantic Weather Ships was prepared and circulated to the members of the Hydrographical Committee. The proposed programme with the comments received was handed over to the General Secretary for transmission to the International Association of Physical Oceanography.

Papers published during the Year.

Jens Smed: Inflow of Atlantic Water into the North Sea through the Orkney-Shetland Channel. Journ. du Cons. XV, pp. 27—38 (1947).

— Monthly Anomalies of the Surface Temperature in the Sea round South Greenland during the Years 1876—1939. Annales Biologiques II, pp. 17—22 (1947).

— The Variation from Year to Year of the Surface Temperature in the Southern North Sea. Annales Biologiques II, pp. 44—45 (1947).

Papers in Preparation.

a) A paper prepared by the late Dr. Jacobsen "Some Characteristic Features in the Variation of the Surface Temperature in the North Atlantic."

b) Two notes by Jens Smed "Hydrographic Conditions in the Faroe-Shetland Channel during August, 1946" and "Hydrographic Conditions at the Northern Entrance to the North Sea in August, 1946" to be published in the Ann. Biol. III.

H. Blegvad.

Reports of Area Committees.

NORTH-EASTERN AREA COMMITTEE

1946

By

GUNNAR ROLLEFSEN

England.

Small samples of cod and haddock otoliths were taken during the last three months of 1946 in small-scale routine market measurements from Bear Island and Barents Sea material.

There are again indications that the 1940 broods of these fish were relatively unsuccessful, and as Group VI, played little part in the commercial catches. This was foreshadowed in 1945 haddock material.

The total number of otoliths dealt with was only 973—cod 508 and haddock 465, composed as follows (a) Bear Island 338 cod and 149 haddock, and (b) Barents Sea 170 cod and 316 haddock.

Norway.

Cruises.

In 1946 11 cruises were made with the motor cutter "Johan Hjort" and hired vessels in the fjords of the Norwegian coast, in coastal waters, and to Bear Island and Spitsbergen.

Oceanography.

On the cruises mentioned above the number of stations amounted to 400. About 3,600 observations were made on temperature and salinity, 2,000 on oxygen content and about 1,000 on pH and P_2O_5.

The permanent stations: In all there are 8 permanent stations at work taking regular observations on temperature, salinity and phytoplankton. No new stations have been established in this period.

Thermograph service: As mentioned in last year's report the collection of data on the surface temperatures from regular steamship routes has been resumed. The thermograph service is in operation on the routes Oslo—Varangerfjord, Bergen—Rotterdam and Bergen—Newcastle.

Plankton.

On the various cruises plankton was collected as usual in tow-net hauls. The cod larvae and their food organisms were especially studied.

Biology.

Cod. The cod material collected by Norway during 1946 mainly originates from the Lofoten area, but some of it was collected in Bear Island and Spitsbergen waters.

Marking experiments with skrei were carried out on Tromsøflaket and Fugløybanken.

Measurements, age determinations and vertebrae counts have been carried out on the same lines as before.

Herring. During the fishery for winter and spring herring, samples were collected for investigations as to size, weight, age, type, numbers of vertebrae, sexual stage and general condition.

Sprat. The sprat population has, as usual, been under regular observation through the investigation of numerous samples collected from purse-seine catches.

Other Investigations.

The work on the problems of artificial hatching and breeding has been continued.

Samples of the deep sea prawn in northern waters and along the Norwegian coast have been collected. The rate of growth in various localities, maturation and change of sex have been further studied.

Work on the biology of the mackerel and saithe has been taken up by the Directorate of Fisheries.

List of Publications 1946–1947.

A. Rep. Norw. Fish. and Mar. Investig.

Vol. VIII, No. 7, 1946.

THEISEN, EILERT: Tanafjorden. En finnmarksfjords oseanografi.

No. 8, 1946.

LØVERSEN, RAGNV.: Undersøkelser i Oslofjorden 1936—1940. Fiskeyngelens forekomst i Strandregionen.

No. 9, 1947.

THEISEN, EILERT: Correction of temperatures and a handy way of making correction charts for reversing thermometers.

B. Årsber. vedk. Norges Fiskerier.

Årsberetning 1944 (1946).

GERHARDSEN, GERHARD M.: Lofotfiskets lønnsomhet i krigsårene 1941—1944.

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NORTH-WESTERN AREA COMMITTEE

1946

By

Å. Vedel Tåning.

During 1946 only Denmark, Iceland and Scotland have carried out research work in the North-Western Area. The work is still hampered by the post-war shortages of research vessels, instruments and personnel. The "Dana" and the cutter "Adolf Jensen" have been the only research vessels in operation. Reports on research work carried out in the area have consequently been received only from Denmark, Iceland and Scotland; the members of the Committee from Eire, England, France, Holland, Norway and Sweden have not been able to contribute to the 1946-report.

Denmark.

Faroe Waters.

The "Dana" operated in the Faroe area during two periods, viz. from August 25th to August 31st, and again from September 18th to September 24th. Owing to the great extent of mine fields the operations of the vessel were much restricted.

Plankton and **hydrographic observations** were carried out at the fixed stations between North Unst (Shetland Is.) and Nolsø. Some work was carried out in various fjords (e. g. Klaksvig, Fuglefjord, Våg Fjord), and eel hand-seine hauls showed that very few 0-group cod were to be obtained here this year.

Pelagic hauls (2 metres stramin net) were carried out in various localities; however, no herring larvae were found.

A few 50′ otter-trawl hauls were operated east of the islands, and the lobster trawl was used in Kalbak Fjord.

Cod material from commercial catches for the study of fluctuations in the stock has not yet been obtained owing to various difficulties. Of **halibut,** otoliths and measurements were obtained from about 500 commercially caught fish.

Icelandic Waters.

The "Dana" operated in Icelandic waters during the period September 2nd to 16th. The most important work done by the vessel was the carrying out of **trawling operations in Faxa Bay.** The 50′ otter-trawl and the commercial trawl were operated inside and outside the fishery limit.

The average catch per trawling hour with the 50′ otter-trawl was as follows for the five important species:

	Plaice	Lemon sole	Halibut	Haddock	Cod
Territorial	60	33	5	240	7
Extraterritorial . .	57	5	18	33	1

168 halibut were marked and liberated. Bottom sampling, hydrographic observations and collecting of phytoplankton were carried out in the Bay.

Outside Faxa Bay only a few trawling operations on the south and west coasts were carried out.

Pelagic stations were operated along the south-west and west coasts of Iceland as far north as Isafjord Deep. The stramin-net and the Hensen-net were used and hydrographic and phytoplankton work carried out. Larvae of the summer spawning herring were abundant.

Greenland (Paul M. Hansen).

During 1946 investigations were carried out by the new surveying ship "Adolf Jensen", a 37 ton motor cutter especially built for the purpose. It has a motor of 120 horsepower and equipment for trawling, a double trawl-winch with about 800 metres of wire on each drum, a hydrographic winch with 2,500 m. wire and is furnished with a Hughes Admiralty Echo Sounder.

The ship had to go to Greenland under its own power and, owing to the long journey with bad weather conditions and a late arrival, the investigations could not commence until July 15th. Because of this only four districts in South-Greenland were visited, viz. Sukkertoppen, Godthaab, Frederikshaab and Julianehaab.

Cod. As usual the three youngest age-groups of cod were searched for with the eel hand-seine at different places in the fjords and along the coast.

The 1945 year-class (I-group) seemed to be a rich one, and should therefore be a good year-class in the commercial fishery for the first time in 1950—51.

1,405 otoliths were collected from the ship and from different fishery-stations along the coast. This material has been treated in connection with 10,024 otoliths collected at the different fishery-stations between 1939 and 1945. In 1946 the stock of cod as shown by commercial catches, included three rich year-classes, viz., 1934, 1936 and 1932.

Marking experiments including 756 cod were carried out on Little Hellefiske bank, Fylla bank, in Godthaabsfjord and off Nanortalik in the Julianehaab district.

Greenland Shark. From the marking experiments made in 1939 in Kvanefjord, Frederikshaab district, a marked shark was recaptured on April 10th 1947 at Kungmiut in the Angmagssalik district on the east coast of Greenland about 630 miles away. It had been in the sea for $80^1/_2$ months and is the third recapture from that marking experiment.

Shrimp (*Pandalus borealis*). Trawling for shrimps was carried out in five different fjords where the echo-sounder registered an even, soft bottom and suitable depths, viz., Godthaabsfjord at Kapisigdlit, Skorfjord, Tunugdliarfikfjord, Lichtenaufjord and Tasermiutfjord. In all these fjords shrimps were caught, but the catches per hour differed in size. The best fishing-grounds were found in Skorfjord and Tunugdliarfikfjord in the Julianehaab district, where the depths varied from about 200 to 400 m. and the bottom consisted of soft clay over almost the whole length of the fjords. The average catch was more than 100 kg. of big shrimps per trawl-hour. At the end of Lichtenaufjord, in the Julianehaab district, rich trawl-grounds were also found, where the depths and average catches were nearly the same as in the above-mentioned fjords. Here, however, the area of the bottom suitable for trawling was not so extensive as in the other fjords.

In Godthaabsfjord at Kapisigdlit only a limited trawling-ground was found, and the shrimps here were smaller than in the other fjords.

In Tasermiutfjord the bottom was well fitted for trawling over the greater part of the fjord, but shrimps were only taken in small quantities in the trawl. The catches consisted mainly of other species of shrimps, e. g., *Spirontocaris*, *Nectocrangon* etc. Perhaps this was due to the low temperature of the water near the bottom in this fjord. While temperatures between one and two degrees centigrade were found in the other fjords, the bottom temperature in Tasermiutfjord was a little below zero, which indicates that Tasermiutfjord may be a threshold-fjord.

The main result of the trawling experiments was that the fjord system Skorfjord-Tunugdliarfikfjord was found to be the best place for commercial shrimp-fishing, and a fishery station with a factory for the production of canned shrimps is planned to be built at Narssak in Skorfjord.

Other Fish. Many different species of fish were taken with the shrimp-trawl. The numbers per haul of each of these species were recorded, and some length measurements were made especially of Norway haddock, Greenland halibut, Polar cod and long rough dab. It is planned in the future to visit the same fjords each year in order to study the probable fluctuations in the stocks of the different species of fish.

Hydrography. Hydrographic work has been carried out along the coast and in the fjords where fishery investigations have been made. Hydrographic sections have been worked over some of the southern fishing-banks. Frede Hermann, M.A., is now in charge of the hydrographic work.

"Heimdal" of the Royal Danish Navy (Commander Tobo Larsen) operated the continuous hydrographic sections off West Greenland during July and August.

Iceland (Árni Friðriksson).

Work at Sea. Owing to the lack of a research vessel, which it has not yet been possible to provide, no large-scale work in the open ocean could be carried out during the year. It was also impossible to charter a fishing vessel for trawling operations It was therefore very fortunate that the Danish research vessel "Dana" was able to carry out the investigations in Icelandic waters which are mentioned above. However special investigations were carried out in Hamarsfjord, Berufjord and Álftafjord (east-coast). General investigations were made in 74 localities; the Danish seine was operated at 8 stations, 55 bottom samples were obtained, and temperature and salinity observations were made at 16 stations. Finally, 2 coastal hauls were made with the eel hand-seine.

Cod. During the year 26,915 cod were measured and 3,007 otoliths collected from the following places (number of otoliths in brackets): Hornafjord 4,785 (607), Westman Is. 1,220 (100), Keflavík 6,160 (599), Hafnarfjord 3,304 (303), Reykjavík 3,460 (592), Akranes 6,400 (600), Siglufjord 1,621 (206). Unfortunately our best worker (in Westman Is.) left us early in the year and we have not yet been in a position to re-establish this old and valuable station.

Haddock. 2,926 fish were measured and 466 otoliths were taken: in Hornafjord 1,433 (263) and the Westman Is. 1,290 (203).

Ling. 594 were measured and 207 otoliths collected in the Westm. Isl.

Herring. Work on the herring was continued along the same lines as in previous years. The lengths of 5,053 herrings were measured, of which 4,091 came from the north coast, the remainder from Faxa Bay (437) and from the south coast (525). 3,779 herrings from the north coast, 437 from Faxa Bay and 300 from the south were treated for number of vertebrae, total weight, sex, stage of maturity and intestinal fat. The ages of 4,448 herrings were determined, 3,779 from the north, 437 from Faxa Bay and 232 from the south. Finally, 44 fat analyses were made in collaboration with the herring oil- and meal-fact-

ories. Stomach-investigations on the north-coast herring were continued, 2,110 stomachs being examined.

Salmon and Trout. 300 salmon scales and about 100 trout scales were collected for age-investigations. Further, three rivers, Eyvindará, Grímsá and Kelduá, which are tributaries to lake Lagarfljót in the east, were examined for their suitability for salmon hatching and comparative tests were made in nearby salmon rivers in Vopnafjorður. The fishery department of the University Research Institute has run some limnological investigations along with marine research work since 1937. In the year 1946 the Government of Iceland established the position of Inspector of fresh water fisheries, whose task it will be to manage those fisheries, study different species of fish and collect statistics. Consequently the fishery department is now exclusively in charge of marine work.

Plankton. No plankton samples could be collected during the year owing to shortage of gear and vessels.

Hydrography. Nearly 300 observations on surface temperature were made off the north-coast during the months July—September.

Scotland (R. S. Clark).

Measurements and scales of inter alia **lemon sole** have been obtained from Aberdeen trawlers fishing at Faroe.

PLATEAU CONTINENTAL ATLANTIQUE

1946

Par

JEAN LE GALL

Ne serait-ce l'absence de croisières océanographiques dans le secteur du Plateau Continental Atlantique que celui-ci pourrait être considéré comme ayant retrouvé son activité passée.

Malgré des moyens limités, les recherches sur les conditions physiques, chimiques et biologiques du milieu marin et sur la biologie des espèces marines ont été reprises, intensifiées même, et d'excellents résultats ont été obtenus.

On doit donc regretter que les circonstances présentes rendent difficiles l'armement des navires de recherches et l'organisation de croisières dans ce secteur ou l'observation des phénomènes hydrologiques est essentielle pour l'étude et la connaissance de la circulation océanique dans les mers avoisinantes.

Travaux à la Mer.

Croisières océanographiques dans le secteur.

En Mai 1946 le "Xauen" et le navire hydrographique "Malaspina" ont exploré la région comprise entre le Cap Ghir (Maroc) et le Cap Juby (Sahara espagnol) et le banc Concepción. Les résultats des croisières et une carte de pêche à échelle 1:500.000 ont été publiés par M. NAVARRO.

Le "Président Théodore Tissier" (France) a été désarmé après une première croisière (15 Juin/1er Août 1946).

Observations océanographiques à bord des bâtiments français de la Marine Nationale chargés de la surveillance et de la protection de la pêche:

— à Terre-Neuve et Groënland: Navires "Lobelia" et "Aventure".
— en Manche et en Mer Celtique: Navire "Spahi".
— Golfe de Gascogne: Navire "Grenadier".

Nombreuses sorties des observateurs français et espagnols à bord des bateaux de pêche opérant sur le Plateau Continental (Mer Celtique, Golfe de Gascogne, Côte d'Espagne et du Portugal, Côtes du Maroc, de Mauritanie et du Sénégal).

Hydrologie.

Belgique
Danemark } Pas d'observations.

Angleterre. Continuation des études sur la teneur de l'eau en phosphates et en nitrates dans la Baie de Plymouth (F. S. RUSSELL).

Eire. Observations habituelles sur le bateau-feu "Coningbeg". Interprétation des observations faites au cours des croisières du "Muirchu" en 1938 et 1939.

Espagne. Etude des problèmes d'océanographie dans le Détroit de Gibraltar (J. M. ROTAECHE et N. MENENDEZ).

L'installation prévue de marégraphes à Pasages (près de St-Sébastien) et à Las Palmas, Santa Cruz de la Palma, complètera l'important réseau de marégraphes fonctionnant actuellement en Espagne (Santander, Gijon, La Corogne, Huelva, Cadix et Tarifa).

France. Observations hydrologiques (températures et salinités) sur le Plateau continental (Golfe de Gascogne, Manche et Mer Celtique), à Terre-Neuve et au Groënland.

Etudes des Sédiments Marins.

France. Continuation des travaux du laboratoire de Géographie de la Sorbonne (Prof. BOURCART, C. FRANCIS-BOEUF, ROMANOVSKY et JACQUET).

Espagne. Etude des Foraminifères des sédiments profonds (COLOM).

Etudes bionomiques dans la région de Pontevedra (LOZANO et ANDREU. Laboratoire de Vigo).

Etude Physique du Milieu Marin.

France. Etude de la propagation du son dans l'eau de mer (Ingénieur Hydrographe LACOMBE).

Plancton.

L'étude de la distribution horizontale et verticale des espèces caractéristiques du Plancton du Plateau Continental Celte et du Golfe de Gascogne (Sagitta, Calanus, Metridia, etc.) a été poursuivie en Eire (Mr. G. P. FARRAN) et en France (Mlle J. FLEURY).

Biologie des Espèces Comestibles.

A. Clupéides.

Hareng.

Eire: Observations (longueur et âge) sur les harengs de la côte d'Irlande et étude générale sur la pêche du hareng en Irlande (G. P. Farran).

Sardine.

Eire: Etude de la pêche de la sardine en Irlande (Arthur E. J. Went); **Espagne** et **France:** Continuation des recherches sur la biologie de la sardine (Navarro, Navaz, Massutí et Cuesta); (J. le Gall, P. Desbrosses, Letaconnoux, Creach); au Maroc (Jean Furnestin) et au Sénégal (*Sardinella aurita* Linné) (J. Cadenat).

Sprat.

France: Répartition, biométrie et comportement du sprat des côtes de Bretagne et du Golfe de Gascogne (Faure, Forest).

Anchois.

France, Espagne: Continuation des recherches sur la biologie de cette espèce (Creach et Letaconnoux); (Navarro et Navaz).

B. Scombrides.

Maquereau.

France: Reprise des observations: statistiques, mensurations, recherches des oeufs et des larves dans les laboratoires de l'Office Scientifique et Technique des Pêches Maritimes.

Germon.

France: Mensurations; croissance.

Bonite à ventre rayé.

Maroc: Recherches sur la biologie de cette espèce (*Katsuwonus pelamys* Linné) (Jean Furnestin).

C. Gadides.

Morue.

France: La remise en service des navires français de surveillance et de protection de la pêche (station de Terre-Neuve) a permis la reprise des observations hydrologiques dans ce secteur et l'étude des conditions de rassemblement de la morue sur ces fonds de pêche (J. le Gall).

Merlu.

France: Mensurations diverses et recherches sur l'influence de l'overfishing sur la constitution du stock (Letaconnoux, Forest).

D. Poissons Divers.

France: M. Letaconnoux et M. Creach poursuivent leurs observations sur la biologie du chinchard — saurel (*Trachurus trachurus* Linné) dans le Golfe de Gascogne. Quelques observations ont pu être faites par M. Creach sur l'esturgeon (*Acipenser sturio* Linné) de la Garonne. La recherche d'oeufs et de larves et des mensurations de flétans (*Hippoglossus vulgaris* Fleming), ont été faites à l'instigation du Conseil International pour l'Exploration de la Mer.

Espagne: M. Navarro et M. Navaz, à Saint-Sebastien étudient le chinchard, ainsi que le bogue (*Box boops* Linné). Un important travail sur l'esturgeon du Guadalquivir a été publié par le Dr. Classen.

Enfin, M. Navaz et M. Lozano en **Espagne,** M. Legendre et M. Forest en **France,** ont signalé et étudié la présence anormale en 1946 d'espèces tropicales dans les eaux de Galice, du Golfe de Gascogne et de la Mer Celtique.

E. Crustacés et Mollusques Comestibles.

France: L'Office Scientifique et Technique des Pêches Maritimes a entrepris l'étude de la biologie des principales espèces de crustacés comestibles des côtes de France (*Nephrops norvegicus*, Linné en particulier). M. L. Lambert et ses collaborateurs ont poursuivi leurs recherches sur la biologie des mollusques marins comestibles.

Espagne: M. A. Miranda a publié le Catalogue des Crustacés de Vigo. L'établissement des cartes des gisements de mollusques comestibles se poursuit en **France** (Dr. L. Lambert) et en **Espagne** (Navaz, Lozano et Andreu).

Pêche.

Repérage des Bancs de Poissons.

Grâce à la contribution active de la Marine Nationale, des essais de repérage des bancs de poissons par l'A.S.D.I.C. ont été poursuivis en France et ont donné d'excellents résultats.

Cartes de Pêche.

L'Espagne annonce l'établissement de cartes de pêche pour la Mer Cantabrique et pour les côtes sahariennes. Le même travail est en cours de publication en France pour les côtes du Maroc, de Mauritanie et du Sénégal.

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NORTHERN NORTH SEA COMMITTEE

1946

By

R. S. Clark

Danish, Norwegian and Scottish research vessels operated within the area in accordance with the programmes outlined by the various countries in the Administrative Report—Rapp. et Proc.-Verb., No. 116, I, p. 32. Scientific observations were also made by Belgium, Denmark and Sweden from commercial vessels employing the herring trawl on the Fladen and Gut grounds. Plankton operations with the Hardy continuous recorder were carried out from steamers acting for the Oceanographic Department, University College, Hull.

Contributions as a result of the above participation have been received from Belgium, Denmark and Scotland and will be included in the report for the area in Ann. Biol. Vol. III. The hydrographical data obtained by Denmark, Norway and Scotland will appear in the Bull. Hydrogr. Market measurements of haddock have been received from England and have been utilised by Scotland in the general scheme of haddock investigations.

The special meeting of herring experts referred to in Rapp. et Proc.-Verb., Vol. No. 116, I, p. 32 to discuss the methods used in herring research was held at Aberdeen from 4th to 7th June and a report of the proceedings and recommendations is given in Rapp. et Proc.-Verb., Vol. No. 117, II, pp. 8—9.

SOUTHERN NORTH SEA COMMITTEE

1946

By

R. S. Wimpenny

As far as the limitations imposed by shortages of men, ships, and equipment, and the restrictions on sea work due to uncleared minefields would allow them, the Committee's members were able to carry out a full year's programme in 1946 on the general lines laid down at the meeting held in October 1945.

Work at Sea.

Belgium.

No sea work has been possible during 1946.

Denmark.

Owing to the presence of minefields work at sea was not carried out by the "Dana" in the North Sea proper. A Danish seiner from Esbjerg, the cutter "Eva Thinnesen", conducted fishing experiments on plaice during the periods May 17th—27th and July 5th—21st. The M/S "F. V. Mortensen" was also engaged marking plaice. Motor boats were used for the work in the Waddensea as usual.

England.

The 90′ M. F. V. "Platessa" started work as a research ship in April and completed 29 voyages by the end of the year, most of these were devoted to the marking of plaice, but from July to November this vessel carried out the Flamborough Line of plankton and hydrographic stations. In December an adapted ex-naval 125′ steam trawler the "Sir Lancelot" was

put into commission, and carried out the Flamborough Line work for this month as well as the first winter voyage of a survey of the plaice egg grounds in the south-west North Sea.

France.

1. Les sections hydrologiques de la ligne Boulogne-Folkestone ont été mises en route, en collaboration avec le laboratoire des pêches de Lowestoft du Ministère Anglais de l'Agriculture et des Pêches.

2. Des observations hydrologiques ont été effectuées en février, avril et octobre 1946 en Mer du Nord (S.W. Pit, Skate Hole) et dans la partie orientale de la Manche, à bord de chalutiers en pêche.

Holland.

No sea work has been carried out during 1946.

Norway.

No work done in the southern North Sea.

Poland.

No report received.

Sweden.

No report received.

Scotland.

The "Explorer" entered the northern limits of the southern North Sea in September 1946 to sample haddock populations as a supplement to the work done on this species in the north-western North Sea earlier in 1946. Plankton observations were also made. The results are incorporated in the report of the Northern North Sea Committee, see *Annales Biologiques*, III, p. 39.

Work on the Fish Species.

General.

Fish measurements were taken throughout the year at North Shields, Grimsby and Lowestoft where 134,112 plaice, 34,261 cod and 6,027 haddock were dealt with on the markets. In addition to this 18,555 plaice from the eastern Channel were measured on Hastings and Rye markets at 3-monthly intervals. At Esbjerg market, in addition to other fish, 7,000 plaice were measured in March, June and October.

Cod.

Market measurements of cod were obtained in Danish, French and English ports, and further material was collected from a hired Danish seine cutter.

Haddock.

Market measurements of haddock were obtained at North Shields and Esbjerg. Material of this species was also collected from a hired Danish seine cutter. Scottish collections were made by the "Explorer" in the southern North Sea, in September 1946.

Plaice.

An investigation of the plaice spawning ground of the south-west North Sea and east Channel was commenced by the English research ship "Sir Lancelot" in December. Research work on the 0-group and young plaice of the Waddensea was undertaken by Danish workers on April 13th, June 20th—24th, and October 18th—25th. Fifty-eight stations were made and the stomach contents were collected and studied; 27,200 specimens of plaice were collected from a Danish seine cutter; otoliths being secured from the majority of the specimens. An intensive study of plaice otoliths has been continued by Dutch investigators who are using the method of "back calculation" to fill in the gaps in their information attributable to the war. Otolith samples to the number of 11,536 have been taken from English fish markets at Grimsby, Lowestoft and Rye in order to obtain the growth rate, and the age composition, of the stock supplying the English fishery.

Marking experiments were carried out by Danish investigators in 16 localities scattered over the central part of the North Sea. A total of 1,400 plaice (size c. 30—33 cm.) were marked and liberated. Only Danish seine-caught plaice were used in these marking experiments, which were carried out in May and July. In late October 230 specimens were marked and liberated in the Horns Reef area. Between April 26th and the end of the year the English research ship "Platessa" marked and released 12,078 trawl-caught plaice of which 2,003 had been returned by the end of the year. These fish were from the grounds frequented by the Lowestoft fishing fleet in the southwest North Sea.

Herring.

During the autumn it was possible to restart the English herring investigations which were suspended in 1939. Twenty-eight samples of fish from Yarmouth and Lowestoft were examined in the Lowestoft laboratory and valuable data relating to age, length and the character Vert. S were collected. 2,791 age determinations were made, 2,800 fish were measured and 2,196 vertebral columns were examined. In connection with the method of sampling the shoals two assistants working on the markets at the two ports measured a total of 156,644 herrings. The French investigations were made at the Boulogne laboratory and dealt with the herring stocks of the southern North Sea and eastern Channel. Observations were taken on length, age, sexual maturity, vertebral formula and on one sample an enumeration of the keeled scales in conformity with the recommendation of the experts at the Aberdeen meeting. The Belgian work on the spent herring was continued during the winter of 1945—46 and resumed again in December 1946. Reports on the three investigations mentioned above are being published in Vol. III of the *Annales Biologiques*.

Sprat.

The French investigations on the sprat were continued during the year and shoals appearing off the Belgian coast in November were made the subject of a special study by M. Gilis.

Rational Fishing.

Theoretical work on overfishing and allied problems has been carried on at the Lowestoft laboratory. Some results are being communicated to "Nature" and progress has been made in the calculation of numerical values to be applied to the various control measures suggested at the International Overfishing Conference held in London in 1946.

Experiments on the effect of the sizes of mesh on the catch of fish were carried out by Holland, and Danish experiments included work with two different Danish seines at several stations scattered over the central part of the North Sea. The two gears differed in the meshes of the cod-end only, one having a 12 cm. mesh and the other an 8 cm. mesh. Between 30th September and 4th October a comparative fishing experiment was conducted between the English motor research trawler "Platessa" and the Grimsby seiner "Primula". Choosing her own grounds on the W. Dogger area the "Primula" outfished the "Platessa". All this work was designed to provide information useful in working out the purpose of the London Conference.

Aids to Fishing.

Asdic. Experimental use of "Asdic" apparatus for the detection of shoals of herring was made by French investigators off Boulogne, on the French coast of the Channel, and the southern North Sea in November, and by an English research ship working in the neighbourhood of Grimsby between July and September.

TRANSITION AREA COMMITTEE

1946

By

ERIK M. POULSEN

Owing to the after-effects of the war investigations have been carried out only on a small scale. In particular the work of the research vessels has been hampered, partly by the mines which are still present over large areas and partly by the difficulties in obtaining sufficient coal or other fuel.

Denmark.

(AAGE J. C. JENSEN and ERIK M. POULSEN.)

Biology.

Plaice. The density of the 0-Gr. and I-Gr. of the plaice was investigated by fishing experiments from the M/B "Havkatten" during July, August and September. Quantitative fishing experiments to analyse the size, age and race of the plaice were carried out in the Limfjord in July, August and September from the S/S "Biologen", and in the Isefjord in spring and September from the M/B "Havkatten" and the S/S "Biologen" respectively.

Marking experiments were carried out in connection with the transplantations. In spring 952.000 plaice were transplanted from the Nissum Broad (western Limfjord) to the central part of the Limfjord and 733.000 to the Belt Sea and adjacent waters.

Market measurements were made in several fishing ports and commercial catches were analysed for age and race.

Other Demersal Fish. The density of the 0-Gr. of the flounder was investigated during the coastal fishery for young plaice. Analyses were made of the various species caught during the above mentioned experiments in the Limfjord and the Isefjord.

Herring. Samples from commercial catches have been examined as to race and age composition.

Sprat. Counts of vertebrae and keeled scales (K_2) were carried out on samples from various waters.

Samples of **"waste-fish"** were examined.

Forecasts of the yields of the mackerel and silver eel fisheries were given.

Valuations of the bottom by means of the Petersen and the van Veen bottom sampler were carried out in the Limfjord and the Isefjord.

Samples of **Norway Lobster and Deep Sea Prawn** from the Skagerak were examined.

Hydrography.

Observations of temperature, salinity and oxygen content were made in connection with the experimental fishery. (See the report of the Hydrographical Committee).

Publications.

BLEGVAD, H.: Beretning om Fiskeriundersøgelserne i Farvandene omkring Danmark i 1944. Dansk Fiskeritidende 20. April *et seq.* 1945, and Vestjysk Fiskeritid. 10. Marts 1945.

— Beretning om Fiskeriundersøgelserne i Farvandene omkring Danmark i 1945. Dansk Fiskeritidende 10. Maj *et seq.*, 1946, and Vestjysk Fiskeritid. 10.—24. Maj *et seq.*, 1946.

— Fiskeriet i Danmark. Bd. I. København, 1946.

— On the Waste Fish Fishery. Rep. Dan. Biol. Stat. XLVIII, 1946.

BRAMSNÆS, FRODE, JUL, MOGENS and OTTERSTRØM, C. V.: Barriers against Fishes by Means of Electricity or Veils of Air. Rep. Dan. Biol. Stat. XLVII, 1945.

JENSEN, AAGE J. C.: Udsigterne for Drivgarnsfiskeriet efter Makrel etc. Dansk Fiskeritidende 11. Maj 1945 and 24. Maj 1946.

— Udsigterne for Blankaalsfiskeriet etc. Dansk Fiskeritidende 7. September 1945 and 30. August 1946.

LARSEN, KNUD: The Liberation of Salmon and Trout Fry in Denmark. Rep. Dan. Biol. Stat. XLVII, 1945.

LUND, SØREN: On *Colpomenio peregrina* SAUV. and its Occurrence in Danish Waters. Rep. Dan. Biol. Stat. XLVII, 1945.

OTTERSTRØM, C. V.: Turbines and Descending Salmon and Trout Smolts (and Eels): IV. Rep. Dan. Biol. Stat. XLVII, 1945.

— and LARSEN, KNUD: Extensive Mortality in Trout caused by the Infusorian *Stentor polymorphus* EHRENB. Rep. Dan. Biol. Stat. XLVIII, 1946.

Poulsen, Erik M.: Investigations on the Danish Fishery for and the Biology of the Norway Lobster and the Deep-Sea Prawn. *Ibid.*

Norway.

Fisheries Directorate, Dept. for Mar. Invest., Bergen (Birger Rasmussen).

Biology.

Deep Sea Prawn. For two years material for the further study of the age and rate of growth in various localities has been collected from the Oslo Fjord and the spawning grounds off Arendal.

Mackerel. Material for the study of the age and rate of growth was collected during the summer of 1946 in various localities along the Skagerak coast.

Biological Laboratory, University, Oslo (Joh. T. Ruud).

See report to Plankton Committee by Dr. Braarud.

The Flødevigen Sea-Fish Hatchery, Arendal (Alf Dannevig).

Hydrography.

Observations on the temperature and salinity of the sea water were taken every working day at Flødevigen at 0, 1, and 15 metres below the surface.

In the neighbouring parts of the Skagerak and in the Oslofjord 145 hydrographic stations were worked.

Biology.

Fish Eggs and Larvae. Material was collected at 46 stations. 188 hauls were made with the egg-net, and 89 using the larvae-net. The material has been partially sorted.

Gadidae.

The 0-group. Experimental fishing with a land-seine in the littoral region has been carried out according to the pre-war scheme, 76 hauls having been made on the Skagerak coast and 59 in the Oslofjord.

Older fishes. Experimental fishing with traps has been carried on at Flødevigen.

Herring. Samples of herring have been examined from different parts of the Skagerak coast.

Lobsters. Statistics from individual fishermen have been collected according to the pre-war scheme.

The Hatchery.

The hatchery has not been in activity owing to the difficulty experienced in obtaining spawners.

Lobsters. Rearing has been undertaken on a small scale.

Oysters. In the rearing of spat only limited results have been obtained.

Experimental Rearing of Fish Larvae. Laboratory experiments gave very promising results with the herring. The hatching and rearing of *Solea vulgaris* was completely successful.

Publications.

The following publications have been issued:

Løversen, Ragnv.: "Torskens vekst og vandringer på Sørlandet. Belyst ved merkingsforsøk 1937—1943". Bergen, 1946. And "Undersøkelser i Oslofjorden 1936—1940. Fiskeynglens forekomst i Strandregionen". Bergen, 1946.

Poland.

No report received.

Sweden.

Biology (Dr. K. A. Andersson).

Herring. Numerous samples have been collected in the Skagerak, several cruises of the research steamer "Skagerak" having been devoted to this work. The samples have been analysed for races and age-groups with special reference to the migrations of the herring between the western North Sea and the eastern Skagerak.

Sprat. Age-group examinations have been carried out as well as investigations into the occurrence of eggs and larvae in the fjords off Uddevalla. Furthermore, the influence of wind and waves upon the development of the eggs has been studied.

Haddock. Samples have been collected and analysed with regard to age-groups and rate of growth. Statistical data of the landings at the fishing port of Göteborg have been collected.

Witch. Statistical data of the landings at the fishing port of Göteborg have been collected; relevant data from previous years have been worked up and are now in manuscript.

Plaice and Flounder. The distribution of the youngest age-groups on the west and south coasts has been investigated. The results of aquarium experiments on the growth of the plaice, which were made in previous years, have been worked up and a paper entitled "Observations on the Growth of the Plaice and on the Formation of Annual Rings on its Otoliths" is in the press.

Bottom Fauna. The analyses of samples of *Foraminifera* collected in previous years in the Gullmar fjord and adjacent waters are practically finished, and a paper dealing with the results is ready for printing.

BALTIC AREA COMMITTEE

1946

By

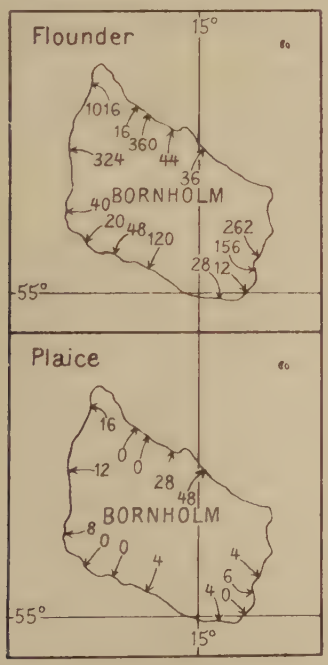
K. A. Andersson

Reports of work carried out during the year 1946 have been received from Denmark, Poland and Sweden.

Denmark.

Biology (Aage J. C. Jensen.)

Plaice, Flounder, Turbot. In order to determine the relative strengths of the year-classes of plaice and flounder the following investigations have been made: 1) Fishing experiments with the Johansen young-plaice trawl on the east coast of Seeland and Møen, 2nd—5th Sept. 1946, 2) Fishing with the hand push net on the coasts of Bornholm during Sept. 1945 and 1946.



Number of 0-Group Fish caught with hand push-net, 1 man per hour.

Herring. Commercial catches from Bornholm have been analysed for race and age.

Plankton. In order to study the food conditions of the herring, Hensen net hauls were made from a cutter at Bornholm during September 1945 and 1946.

Hydrography.

Hydrographical observations were taken in connection with the plankton work at Bornholm.

Publications.

Blegvad, H.: Beretning om Fiskeriundersøgelserne i Farvandene omkring Danmark i 1944. Dansk Fiskeritidende 20. April *et seq.*, 1945, and Vestjysk Fiskeritidende 10. Marts 1945.

— Beretning om Fiskeriundersøgelserne i Farvandene omkring Danmark i 1945. Dansk Fiskeritidende 10. Maj *et seq.*, 1946, and Vestjysk Fiskeritidende 10.—24. Maj *et seq.*, 1946.

- Fiskeriet i Danmark. Bd. I. København, 1946.

Poland.

Biology (M. Bogucki).

Cod. Investigations concerning the composition of the stock as to the length, maturity and age-groups, were continued in the Gulf of Danzig. Market measurement of cod landed in Gdynia was carried out.

Flat Fishes. Numerous samples from various parts of the Gulf of Danzig and adjacent waters were collected and analysed as to the year-classes and rate of growth in different species (*Pleuronectes flesus*, *Pl. limanda*, *Pl. platessa*, *Rhombus maximus*).

Sprat. Sprat fishery was practically stopped, the shoals of sprat in the Gulf of Danzig being very small.

Investigations regarding the frequency and distri-

bution of eggs and larvae of sprat were carried out during the summer months of 1946.

Dr. Z. MULICKI has prepared for printing the results of his investigations on the occurrence of sprat during the summer months of 1939.

Herring. Investigations of the samples of herring regarding age-classes and race differences between the autumn and spring spawners were continued.

The paper of W. CIEGLEWICZ and K. POSADZKI entitled "Comparative Studies of the Spring and Autumn Spawning Herring of the Gulf of Danzig" is printed in Ann. Biol. II.

Onos cimbrius. Investigations of the *Onos cimbrius* as to the length, age-classes and maturity were carried out.

Garfish. Studies on the occurrence and development of *Belone acus* in the Bay of Puck were continued.

Sweden.

The m/s "Eystrasalt" was kept in commission during the period April—October and the cruises were extended from the Sound to the northernmost part of the Baltic area. The research vessel "Skagerak" made a cruise to the southern Baltic in October.

Biology (HARALD ALANDER).

Cod. The stock of cod was investigated and many fishing experiments were made in different parts of the whole area. Samples were collected and analysed. The distribution of eggs and larvae was investigated.

Plaice, Flounder, Turbot. Quantitative fishing experiments with the Johansen young-plaice trawl were made in shallow water at the coast of Scania and Blekinge during October. The stock of flat fishes was investigated in the Bornholm area and at the coast of Gotland.

Herring. A greàt many fishing experiments were made in order to study the stock of herring and its changes inside the archipelago, off the coast and in the open sea. Samples from different parts of the area were collected and analysed as to race, age and spawning periods.

Plankton. Many samples of plankton were collected from different parts of the area.

Hydrography.

In connection with the biological investigations observations of temperature have been made. Water samples have been taken and analysed as to salinity and oxygen content.

Reports of other Committees.

HYDROGRAPHICAL COMMITTEE

1946

By

Prof. MARTIN KNUDSEN

Belgium (H. KOCH).

No hydrographic observations have been made in Belgium during the past year.

Denmark (HELGE THOMSEN).

North-Western Area and Northern North Sea.

During the cruise of the research vessel "Dana" in the North Sea and the Northern Atlantic from August 20th to September 30th observations of temperature and salinity were carried out at 71 stations by JENS SMED.

In the coastal waters off Western Greenland hydrographical observations, mainly of temperature and salinity, were carried out from the research cutter "Adolf Jensen" at 52 stations between June 24th and September 21st by F. HERMANN.

Off West Greenland the three permanent sections have been run as follows:

Fylla Bank: July, August.
Lille Hellefiskebank: July, August.
Store Hellefiskebank: July, August.

Surface observations of temperature and salinity have been continued from liners running to Iceland and Greenland.

At Myggenæs (Faroes) the surface temperature has been measured daily.

Southern North Sea.

Hydrographic observations were carried out from the cutter "Eva Thinnesen" from May 17th to May 28th and from July 6th to July 21st in connection with biological investigations.

Daily observations of temperature and salinity were carried out by the Danish Meteorological Institute from the light vessel "Vyl" throughout the year and from the light vessel "71 SW." (56°58′7 N. 7°40′0 E.) from November 9th.

Transition Area.

In connection with biological investigations observations of temperature and salinity were carried out in several localities, mainly in fjords, by the research vessels "Biologen" and "Havkatten".

In Roskilde Fjord some investigations on the influence of the wind on various floats were carried out by HELGE THOMSEN.

Regular hydrographic observations have been made by the Danish Meteorological Institute as follows:

1) daily observations of temperature and salinity (by hydrometer) from 10 light ships and 19 coastal stations,

2) 4-hourly estimations of the surface current from 10 light vessels.

Baltic Area.

At Christiansø near Bornholm the Danish Meteorological Institute has made daily surface observations of temperature and salinity (by hydrometer).

Éire (G. P. FARRAN).

Owing to the absence of a research vessel no observations were carried out at sea during 1946.

England (J. R. LUMBY).

Fisheries Laboratory, Lowestoft.

1. **Research Ships.** Only a small vessel, the "Platessa", was available for the latter half of the year, until December, when the trawler "Sir Lancelot" was commissioned. From July and each successive month, the routine observations were carried out on the Flamborough Line. On a short cruise at the end of December observations of salinity and temperature were made in the Southern Bight, in connection with plaice egg investigations.

2. **Commercial and Light Vessels.** Routine observations of surface salinity and temperature were restarted on the Newhaven—Dieppe and Hull—Copenhagen lines, and at the "Smith's Knoll" light vessel.

Marine Biological Association, Plymouth.

1. Monthly cruises to station E 1 by the research vessel "Sabella" were started in November, to collect data on salinity, temperature, and phosphate.

2. To obtain information on the winter maximum for phosphate, and also on salinity and temperature, 10 stations were worked in December within an area bounded by the parallels of 49°14′ and 50°15′ N. Lat., and the meridians 4°13′ and 5°38′ W. Long.

Department of Oceanography, University of Liverpool.

1. Surface temperature and salinity observations were made three times a week at each of the following 8 stations in the Irish Sea—Bardsey Lighthouse; off Holyhead; between Holyhead and the Kish Light vessel; off the Kish Light vessel; Mersey Bar Light vessel; Morecambe Bay Light vessel; Chicken Rock Lighthouse; between Stranraer and Larne.

2. In July and November, observations on waves were made in Liverpool Bay. In July continuous records were taken of the speed of the oscillating currents at different depths, and eye observations made of the period and range of the surface waves. In November similar observations were taken, and also continuous records of the oscillating pressure at different depths.

Finland (G. Granqvist).

Regular observations on temperature, salinity, current, wind, ice and height of the sea-level have been carried out as before on that part of the coast, which since the peace treaty, still belongs to Finland. During the year it has been possible to resume work at all stations, including light vessels, within the area. It has been impossible to undertake any cruises, but by the end of the year it had been arranged that a passenger vessel should take surface samples for temperature and salinity determinations on the Copenhagen—Finland route.

France.

(H. Dyèvre.)

Deux bâtiments de la Marine Nationale ont effectué au cours de l'année 1946 les travaux suivants:

1. Corvette "Lobélia":

a) de nombreuses mesures de température et de salinité de l'eau superficielle, au cours de sa navigation entre la France, les Bancs de Terre Neuve, les Bancs du Groenland et retour;

b) 61 stations hydrologiques sur les Bancs de Terre Neuve et du Groenland.

2. Escorteur "Grenadier": dix stations de température au cours de courtes croisières sur les côtes de France.

(J. le Gall.)

Croisières.

I. Croisière du "Président Théodore Tissier", Juillet 1946 à l'entrée occidentale de la Manche et en Mer Celtique.

II. Croisiére de l'"Aventure" (Marine Nationale) sur les pêcheries de Terre Neuve et du Groenland, faisant suite à la campagne du "Lobélia" dans les mêmes régions.

III. Sorties diverses à bord des navires de pêche.

IV. Croisières périodiques du Service Scientifique des Pêches du Maroc (Janvier—Avril, Juillet—Août, Novembre) à bord des avisos de la Marine Nationale ("Ruse", "Eveillé", "Emporte").

Sections Hydrologiques.

Travail fait en liaison avec le Ministère de l'Agriculture et des Pêcheries de Grande Bretagne.

Stations Fixes. Observations continues sur les Paquebots.

Pas d'observations en 1946.

Holland (H. Keyser).

The only oceanographic observations made by the Netherlands in 1946 are current observations with Carruthers' Vertical Log by Dr. Ir. J. van Veen. These were made aboard the light-vessel "Goeree" (51°52′30″ Lat. N., 3°38′45″ Long. E.) from February to December (inclusive).

Norway (J. Eggvin).

The Fisheries Directorate's Marine Research Institute.

1. The Cruises. During 1946, 7 cruises were undertaken by the "Johan Hjort" and 4 cruises by 3 chartered vessels and 2 naval units ("Buttercup" and "Eglantine"). The two latter were placed at the disposal of the Fisheries Directorate's Marine Research Institute for ASDIC research on cod and herring shoals, and also to study the penetration of ASDIC impulses through water layers of various characters. Nine of the cruises were carried out in coastal waters and in some of the fiords along the coast of Norway, between Jæren and North Cape. The cruise of May-June was made to the eastern part of the North-Sea off south-western Norway and to the Skagerak between the Norwegian coast, the coast of Sweden and Skagen in Denmark. The last cruise, in June—July 1946, was undertaken off the coast of Finmark and in Svalbard waters to 80° N. Latitude.

Observations were made at 400 stations with a total of 7,928 water samples. Of these 4,323 were analysed on board for O_2, pH, P_2O_5 and NO_3 nitrogen, while most of the chlorinity samples were analysed in the chemical laboratory of the institute.

The penetration of light into the sea at different depths has been investigated with the use of recording apparatus. These investigations have been carried out in the Vestfjord and in the Osterfjord near Bergen.

2. The Fixed Oceanographical Stations. Observations at the fixed oceanographical stations along the Norwegian coast were carried out as per programme and two new stations were started, one west of Træna (66°38,3′ N. Lat., 12°04,6′ E. Long.) and the other west of Ona light at Möre (62°15,4′ N. Lat., 6°30,5′ E. Long.).

The deepest observations made at the two new stations were 225 and 200 m. respectively. Apart from temperature-readings and the collection of Cl samples at the standard depths from 1 m. to the bottom, plankton samples were collected at depths of 1, 10, 25, 50, and 75 m. The latter are now being worked up at the Botanical Laboratory of Oslo University, while the rest of the material is being worked up by the Marine Research Institute of the Fisheries Directorate.

Eight fixed oceanographical stations are now in action along the coast of Norway, where observations are being made all the year round. These are made once a week during the period from December to April and once every second week during the rest of the year.

3. The Sea-Thermograph Service. Observations on board liners with the self-registering sea-thermographs have been continued between Oslo and Tromsö and from April 1946 also between Tromsö and Kirkenes, so that we are now in possession of an unbroken temperature record for the surface layer along the entire coast of Norway.

Across the North-Sea, between Bergen and Rotterdam and between Bergen and Newcastle the sea-thermograph service was resumed in December 1945 and June 1946 respectively, after having been suspended since September 1939.

Poland (M. Bogucki).

The Meteorological-Hydrographical Institute at Gdynia carried out

1) regular daily observations of the surface temperature and salinity at 3 coastal stations: Gdynia, Kołobrzeg and Ustka,

2) measurements of the variations of the sea level 3 times daily at 15 localities.

The Marine Station at Gdynia has made monthly observations, at every 10 metres of depth, of the temperature, salinity and O_2 content at 10 stations in the Bay of Puck and the Gulf of Danzig.

Scotland (John B. Tait).

The Scottish research ship "Explorer" was re-commissioned for scientific work in 1946 and, after the necessary preparations, hydrographical work was conducted in the following areas during the months stated:—

May	The Moray Firth and Aberdeenshire coast areas.
June	Orkney, Shetland and outer Moray Firth waters.
July —	The north-western North Sea and north-west of Shetland into the deep water of the Faroe-Shetland Channel; also between Shetland and Norway on latitude 61° N.
August —	To the north and west of Scotland and west of the Outer Hebrides.
September —	Middle North Sea area west of longitude 2° E. between latitude 57°30′ N. and the Dogger Bank.
October	North-western North Sea, Orkney and Shetland waters.
November —	Middle North Sea west of longitude 1° W between the Firth of Forth and Aberdeen.
December —	Moray Firth.

PLANKTON COMMITTEE

1946

By

F. S. Russell

Denmark (P. Jespersen).

1. Investigations on the food of the herring in the waters round Bornholm, which have been carried out through several years, have been continued. Herring stomachs have been collected and preserved as regularly as possible during the whole year. The contents of the stomachs have been analysed with a view to recording the changes in the quantity and the composition of herring food in these waters in the different seasons and from year to year. In June special investigations were carried out off the town of Gudhjem in co-operation with the herring fishery at this place. It has been shown that there are considerable variations in the quantity from year to year, but that the composition of the food shows the same seasonal cycle each year. It is the intention as far as possible to continue these investigations for several years in the future.

2. The working up of the material of deep-sea copepods from North Atlantic waters has been continued.

3. An examination of the phytoplankton from the coastal waters at the south-western part of Jutland ("Vadehavet") has been finished, and a paper is ready for printing.

4. Previous collections of bottom-diatoms from the estuaries near Esbjerg have been worked up.

5. During the year plankton samples have been collected in parts of Praestø Bay (SE.-Seeland); the water is here polluted by sewage and the investigation has a special reference to the effect of pollution upon phytoplankton.

6. From 20th August to 30th September the research ship "Dana" made a cruise to North Atlantic waters; plankton samples were collected in coastal waters at Iceland and the Faroes and in the surrounding seas.

7. The examination of size variations and occurrence of peridinians in the waters round the Faroes and Iceland has been continued, and a report is ready for printing.

Éire (G. P. Farran).

It was not possible to make any plankton observations at sea during 1946, as no research vessel was available.

England.

Hull (C. E. Lucas).

Routine plankton recording began again in January, 1946, between Hull and Copenhagen (2989 miles in the year). The Department's laboratory at Leith has been re-opened and five other routes have since been resumed—Leith—Copenhagen (4661 miles) in February, Leith—Lerwick (1952 miles) and Pentland—Iceland (1657 miles) in June, Hull—Rotterdam (392 miles) in August and Hull—Hamburg (469 miles) in October. In addition, trials have been carried out on new and smaller models of the Plankton Indicator, as also on new water-sampling gear preparatory to a small programme of hydrological work in relation to continuous plankton recording.

Two *Hull Bulletins of Marine Ecology* have been published. One (No. 17 by Lucas and Rae) reconsiders routine salinity data from a number of the Council's routine stations as a background to the plankton recording programme of 1932—37, and the other (No. 18 by Brown and Cheng) reports on investigations into the food of cod and haddock in northern waters, in particular enabling a picture to be shown of seasonal variations in feeding off Bear Island, where pelagic crustaceans were important foods from February to August.

Papers in the press include Bulletin No. 11 (by Rae and Rees) reporting on the Copepoda in the North Sea during 1938—39; several 'indicator' species are shown to have characteristic distributions and their movements have been recorded month by month. Of two other papers, one (by Hardy and Paton) reports on the preliminary results obtained with a special apparatus to investigate vertical migration, and the other (by Lucas) reviews literature illustrating the environmental significance of free

metabolites, with particular reference to plankton ecology. Reports are in preparation on the distribution and life-history of *Calanus* in the North Sea, general zooplankton, young fish and fish eggs, size variations in *R. styliformis* and *B. sinensis* and on the general ecology of the North Sea plankton.

Lowestoft (R. S. Wimpenny).

The Flamborough Line of six Hensen stations at $12^1/_2$ mile intervals between Flamborough Head and the south-west Patch of the Dogger Bank were resumed in July. A comparison of these results with pre-war data suggests that while there have been no great changes in the zooplankton population, that of the phytoplankton has decreased. This is particularly noticeable in the case of the diatom *Rhizosolenia styliformis*. The most unusual catch was at station F. 2 in November. This included eight asexual specimens of a Doliolid, unfortunately too crushed by the Hensen net to be identified. The composition of the rest of the sample and the general hydrological background did not suggest any substantial Atlantic inflow. The fat content of plankton samples from this line of stations was rather lower than that found in the corresponding half-year before the war, but was not far from the average value of the series of these observations begun in 1932. In addition to assessing the fat content the total dry weight of the Hensen net catch was determined for each station. This represents an addition to the pre-war routine, and it is not yet possible to make any useful comparisons with pre-war work.

Hensen stations were worked in the western Channel and southern North Sea in the last week of December for the purpose of charting the plaice egg and plankton distribution in this area. Moderate patches of *Biddulphia regia* and *Chaetoceras densum* were characteristic of the phytoplankton found.

Experimental work was begun on the use of an electric submersible pump used in connection with an edge filter. This apparatus gives promise of a much wider application, but it is still in too early a stage of development to furnish any useful report.

No publications on plankton were made by members of the Lowestoft staff during 1946.

Millport (S. M. Marshall).

Regular collections were made throughout most of 1946 for the study of the occurrence of barnacle larvae in the plankton.

Plymouth (F. S. Russell).

Dr. H. W. Harvey has studied the effect of manganese on three species of autotropic flagellates and on a marine *Chlorella*. These were unable to make long continued growth in inshore water collected during the autumn and winter unless 0.5 mg. Mn per cubic metre was added to the water. He has since been engaged upon a method of estimating the total phosphorus in samples of sea water and this has entailed a rigorous examination of the molybdenum blue-stannous chloride method of estimating phosphate in solution in sea water.

A paper is being published in Volume XXVI No. 4 of the *Journal of the Marine Biological Association* by Dr. M. V. Lebour on the occurrence of larval stages of bottom invertebrates in the plankton off Plymouth. A paper on the triradiate and other forms of the diatom *Nitzschia closterium* cultured as food for plankton animals has been published by Mr. D. P. Wilson in the same Journal, Vol. XXVI No. 3.

Observations on the occurrence of zooplankton indicators off Plymouth are being continued.

France (F. Bernard).

Les recherches ont porté surtout sur le nanoplankton calcaire, encore plus important quantitativement à Alger qu'à Monaco. Ses variations saisonnières furent suivies de 0 à 400 mètres de profondeur, avec étude des températures, salinités, teneurs en phosphates. En moyenne, trois séries de prises d'eau ont pu être réalisées chaque mois.

Le rôle de chaque espèce dans le volume total a été précisé: pratiquement, une seule, *Coccolithus fragilis* Lohmann, fait l'essentiel de la production.

D'autre part, le Dr. Franc a observé les véligères de Gastéropodes pélagiques, et, pour plusieurs d'entre elles, a obtenu la métamorphose au laboratoire; celà précise la systématique des véligères grâce à l'examen de la radula. Mlle Eustache a commencé l'étude des Copépodes, comme répartition verticale et quantité.

Des données sur la transparence marine en Méditerranée sont en voie de publication: elles montrent le rôle des *Coccolithus* dans l'absorption de lumière, et leur influence dominante presque toute l'année.

Publications en cours.

Bernard, F.: Rôle des Protistes dans la transparence marine. Bull. Soc. d'Hist. nat. d'Afr. du Nord, 1947.
— Fertilité marine au large d'Alger. C. R. Soc. de Biologie, 1946.
Lecal, J.: Distribution verticale des Flagellés calcaires au large d'Alger. C. R. Soc. de Biologie, 1947.

Holland (B. Havinga).

It was not possible to carry out any international plankton investigations during 1946.

Norway (T. Braarud).

In 1946 the collaboration with the Directorate of Fisheries in Bergen continued, phytoplankton samples being collected at the oceanographic stations established by Dr. Eggvin. Part of the material from the stations Sognesjöen and Eggum has been worked up at the Botanical Laboratory, and the work is being continued and is planned to include the material from all the oceanographic stations during one year.

In the Oslo Fjord a survey was made in July with the new research vessel of the Biological Laboratory, "Gunnar Knudsen", covering only the inner part of

the fjord. Hydrographical, chemical and quantitative phytoplankton and zooplankton samples were collected and preliminary bacteriological studies carried out. The material is intended to form a basis for a comparison with the survey undertaken before the war, and also for more special investigations to be carried out in the near future.

During the rest of the year monthly observations were made at 4 stations in the inner fjord, the programme mainly being the same as during the summer.

Part of the zooplankton material has been worked up by Mr. Fredrik Beyer, while the rest of the observations have not as yet been dealt with.

Poland (M. Bogucki).

Monthly qualitative zoo- and phytoplankton investigations as to the vertical and surface distribution were made in the Gulf of Danzig on 10 fixed stations.

Qualitative investigations of the fish eggs and larvae were carried out.

Sweden (H. Höglund).

1. Preliminary investigations have been made on the supposed mortality in planktonic fish eggs (especially sprat eggs) caused by rough weather.

2. The investigations upon the formation of Vitamin D have been concluded.

3. Researches on the relation between sub-marine daylight and the photosynthesis of the algae have also been concluded. The latter, however, only concerns sessile algae.

SALMON AND TROUT COMMITTEE

1946

By

KNUT DAHL

The manufacture of tags for 1947 has met with some delay mainly due to difficulties in obtaining certain material for the production of the hydrostatic tags.

Belgium (Prof. H. KOCH).

No work on salmon research has been done in Belgium.

Denmark

(C. V. OTTERSTRØM and ERIK M. POULSEN).

1. Biological Investigations.

The biological examination of the salmon and trout rivers has been continued in accordance with the principles published by the Danish Biological Station in its report Vol. XLII, and plans have been worked out for liberating salmon or trout fry into a total of 42 river systems or groups. Investigations on how to facilitate the passing of turbines (Gram Slot water-mill, Juellingsholm water-mill, Harte works) by descending smolts have been continued. Liberation experiments with salmon fry have been started in the Gudenaa where the original stock is extinct. The research on the smelt and on the growth and distribution of grayling has been concluded. The investigations into the growth etc. of Danish salmon stocks, which have now been carried on for several years, have been continued according to the usual method (scale analysis). Investigations into the sea trout have been extended to include distribution, ecology and biology.

2. Artificial Propagation.

Hatchery operations were carried out at a number of centres, and fry and half-yearlings, especially of sea trout, have been liberated in rivers with free access to and from the sea.

3. Statistics.

As in former years statistical data on the individual weights of sea trout (and salmon) have been collected in the Randers Fiord (estuary of the river Gudenaa), and samples of scales of sea trout have been taken in the same area.

Éire (A. WENT).

1. Biological Investigations.

During the year investigations into the age and growth of salmon of the rivers Inny, Drumcliffe, and Kerry Blackwater were carried on and a report on the Kerry Blackwater salmon was accepted for publication. In addition, material relating to the stocks of salmon in some 25 rivers collected during 1945 was investigated and the results are now in the course of printing. Additional material was collected in 1946 from the same rivers with a view to obtaining more extensive information.

Over the past forty-seven years a large number of kelts have been tagged in Ireland. Results of the recaptures have now been compiled and a report on the subject is in course of being printed.

2. Artificial Propagation of Salmon and Trout.

Hatchery operations were carried out at a number of centres during the year but, generally speaking, owing to the abnormal floods which prevailed in the last quarter of the year the yields were fairly small.

3. The Catch of Salmon.

Each year a return of catches is demanded from every holder of a licence to fish for salmon. The returns for 1945 have now been completed, and they show that the catch in that year was approximately a half million kilogrammes, probably the smallest catch recorded in the past 50 years. The returns for 1946 are now in the course of compilation and will not be available for some months. The export figures (published monthly by the Department of Industry and Commerce) give some idea of the relative abundance of salmon. In 1946 520,000 kilogrammes of salmon were exported mainly to Great Britain. This amount was approximately twice that of the previous year.

In general spring fish were comparatively scarce, particularly in the early months of the season, but in many rivers relying on the summer fish the incoming salmon were exceedingly numerous from the middle of June onwards. The grilse runs were almost up to average. The drift-net fishing off the north and north-west coasts gave improved results during the year when compared with those of 1944 and 1945. This fishing depends almost entirely upon the runs of grilse.

4. History of Irish Fisheries.

For some years investigations into the history of Irish fisheries and the methods of fishing have been made. In 1946 some of the fishing weirs for salmon in tidal waters were completed and the results have been incorporated in a paper now in press.

Publications.

WENT, ARTHUR E. J., 1947: "Salmon of the Kerry Blackwater". Sci. Proc. R. Dublin Soc.
— "Irish Salmon 1945" in press. Sci. Proc. R. Dublin Soc.
— "Salmon marking in Ireland" in press. Proc. Roy. Irish Academy.
— "Salmon of the river Shannon 1944 and 1945" in press. Journal of Ecology.

Copies of these papers will be circulated eventually to the members of the Committee.

England and Wales (F. T. K. PENTELOW).

During 1946 no work in fulfilment of the Council's programme for the Salmon and Trout Committee was carried out in England and Wales, but preparations were made for collaboration in the International Tagging Experiment in 1947.

Finland (T. H. JÄRVI).

The yield of the salmon fishery in the Bothnian Bay was extremely good in 1946. Material for scale analyses was collected in the Oulu River area. 212,100 salmon fry and 7,800 one-summer-old parr were liberated in the Oulu River, the latter in September.

France (R. VIBERT).

Le matériel pour les études d'écailles a été collecté pendant les années 1945—46—47. Le travail de dépouillement est en cours.

En 1945 a été terminé sur le Gave de Pau — affluent de l'Adour — au barrage de Baïgts (10 mètres de haut) une échelle à saumons à "avant bec mobile" pour suivre les variations du plan d'eau amont. Le contrôle du fonctionnement de cette échelle, par nasse de contrôle, a montré son bon fonctionnement.

Depuis 1945 le Professeur FONTAINE a entrepris dans le bassin de l'Adour des travaux sur la physiologie et la biochimie du saumon en rapport avec ses migrations.

Les déversements d'alevins de saumons ont été les suivants pendant les dernières années:

	Bassin de l'Adour	Bassin de la Loire	Fleuves côtiers bretons	Fleuves côtiers normands
1942	180,000	0	—	—.
1943	700,000	6,000	—	—
1944	450,000	3,000	—	—
1945	50,000	25,000	—	—
1946	380,000	230,000	—	19,000

Holland (B. HAVINGA).

No salmon and trout work was done in 1946.

Iceland (THOR GUDJONSSON).

On May 1st 1946 the Government of Iceland established the Directorate of Freshwater Fisheries under direction of the Inspector of Freshwater Fisheries. The duties of the Directorate are to manage the freshwater fisheries, to conduct research on freshwater fisheries and limnology, to collect statistics, etc. Formerly the University Research Institute, Department of Fisheries, carried on some research on freshwater fishes and limnology along with their marine work.

1. Biological Investigations.

Three hundred samples of salmon scales were collected for age analysis. They came mainly from three rivers, of which two are located on the north coast and one on the west coast. Four tributaries to the glacial river Lagarfljót on the east coast were surveyed in order to determine whether these streams might be able to support salmon. Some samples of trout scales were collected from fish caught in these tributaries.

2. Artificial Propagation.

The hatcheries in Iceland, which number about twentyfive, are small having facilities for handling only one hundred thousand to two million ova. Twelve hatcheries were operated during the year. Their output is not known. Ova were stripped mostly from salmon, but also from sea trout, brown trout and char.

3. Statistics.

Complete returns of the catch of salmon and trout from the various parts of the country are not yet available, and it is therefore impossible to give the final figures. However, the indication is that the catch was somewhat below the average.

Norway (KNUT DAHL).

In 1946 the administration of the salmon and freshwater fisheries has been to some extent reorganised and broadened.

The research work has been limited mainly to the working up of material from earlier investigations. A few kelt-taggings were carried out in the autumn of 1946 mainly in the river Orkla.

Preparations were made for tagging in 1947.

Publications.

SVEN SØMME: "Den norske laksestamme". Landbruksdepartementets småskrifter nr. 93. 1946.

KNUT DAHL: "Vassdragsreguleringer og virkningen på fisket", særtrykk av Glommens og Laagens Brukseierforening 1918—43, Oslo, Grøndal & Søn, 1947.

Poland (M. BOGUCKI).

The yield of the salmon fishery in 1946 was good. Material for scale analysis of salmon from the Gulf of Danzig was collected.

Artificial fertilization was continued. The number of hatched eggs reached over 6 millions. Some thousands of fry from 1945 are being kept for tagging experiments in 1947.

Scotland (P. R. C. MACFARLANE).

Staffing and other difficulties prevented us from putting into operation any of our research proposals last year. Arrangements for making a start in the season 1947 are well forward, particularly in regard to the committee's scheme for tagging salmon in the sea.

Spain.

No report received.

Sweden (N. ROSÉN).

The following tagging experiments have been carried out:

(a) Salmon ascending the Lule River.
(b) Spent Salmon, used for artificial propagation in the rivers Ume, Indal, Dal, and Mørrum.
(c) One-summer-old salmon hatched in ponds and liberated in the rivers Indal and Dal.
(d) Salmon ascending the river Ätran for spawning, two of them used for artificial propagation at the hatchery of Herting, near Falkenberg.
(e) Sea trout in the river Ätran, at Herting. Some of them used for artificial propagation at Herting, Falkenberg.

A preliminary report on the salmon of the west coast of Sweden was laid before the Committee at its last meeting, and a final report is in preparation.

Appendix.

The following report has been received from **Canada** (J. R. DYMOND).

Dr. Huntsman's Atlantic Salmon Investigations.

The studies on Atlantic salmon which Dr. HUNTSMAN has been carrying out have had two principal objectives, first to increase the stock of salmon and second to develop principles for managing salmon rivers.

Outstanding among the results obtained during the past year were the following.

Even with very heavy planting of underyearlings in the lower open waters of the Pollett river, there has been finally almost complete disappearance of the fish as yearlings before they were ready to descend to the sea and mergansers are believed to be responsible for this.

With continued low water in 1946 the adult Petitcodiac salmon failed to ascend to the upper spawning streams, at least up to the time these became frozen a month or more after the usual spawning time.

In the heavily mixed water of Minas Channel distant from salmon rivers is the largest salmon fishery of western Nova Scotia. Tagging the fish has shown that in a wet season (1945) they go riverward rather than oceanward and in a dry season (1946) it is the reverse.

Differentially marked offspring of "lake" and "sea" salmon planted in streams connecting lakes inhabited by the "lake" salmon gave no evidence when trapped as smolts in 1946 that the "sea" salmon but not the "lake" salmon were migrating through the lakes to the sea, which it has been thought that they do.